

environmental engineers and consultants

SITE INVESTIGATION and  
REMEDIAL ACTION REPORT

STAINED SOIL AND PAD  
SHEFFIELD STEEL CORP.  
JOLIET FACILITY  
USEPA ID No.: ILD 151 759 248

prepared for:

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Joliet, Illinois

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## 1. INTRODUCTION

### 1.1 Project Overview

This report addresses the investigation and remediation of three stained soil areas and a stained concrete pad identified at the Sheffield Steel facility located in Joliet, Illinois. The stained soils and pad were identified in August 1999, during a site inspection conducted by the United States Environmental Protection Agency (USEPA). The areas appeared to be stained with petroleum oil.

One stained soil area was located at the facility's former "oil drum accumulation area," a second area was located near the "oil room," and the third area was located near the "mill scale cooling tank." The concrete pad underlies the former "oil drum accumulation area." Figure 1-1 depicts the areas.

In April/May 2000, the stained soils were excavated and the stained pad was cleaned. The soils and cleaning waters were sampled and disposed of off-site. The sampling was performed to determine whether the waste materials should be managed as hazardous wastes, as defined by the Resource Conservation and Recovery Act (RCRA). The waste materials were not hazardous waste and therefore were disposed of as non-hazardous "oil contaminated soils" and "water and oil." All necessary investigation and remediation activities are complete.

### 1.2 Project Organization and Key Personnel

The USEPA requested Sheffield Steel address the stained soils and pad in correspondence dated December 9, 1999. Sheffield Steel's legal counsel (Collier, Shannon, Rill & Scott) retained Huff & Huff, Inc. (H&H) to perform the investigation.

Key project personnel are:

Mr. Patrick Kuefler	USEPA	Project Manager
Ms. Deirdre Flannery-Tanaka	USEPA	Legal Office
Mr. Douglas Strickland	Sheffield Steel Corp.	Mgr. Of Env., Health, & Safety

Mr. Frank DiFalco	Sheffield Steel Corp.	Operations Manager
Mr. Joe Zotto	Sheffield Steel Corp.	Gen'l Supervisor of Maintenance
Mr. John L. Wittenborn	Collier, Shannon, Rill & Scott	Legal Counsel
Mr. James E. Huff, P.E.	H&H Environmental	Principal Consultant
Ms. Sarah Monette, P.E.	H&H Environmental	Sr. Project Engineer

Contractors used during the project were Superior Special Services, Waste Management Inc. (Laraway Landfill, Illinois) and Crest Environmental (Crest Hill, Illinois).

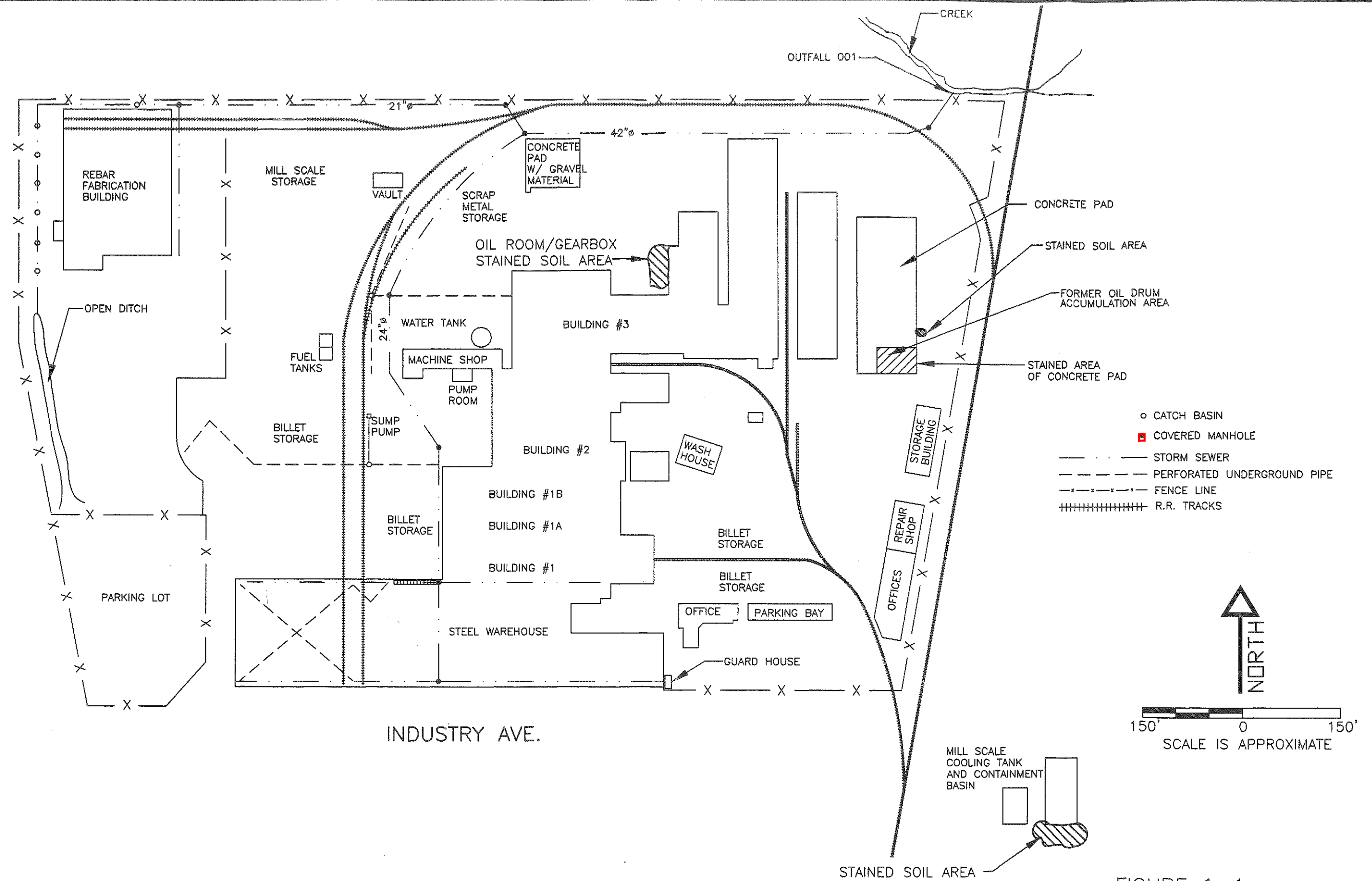


FIGURE 1-1  
LOCATIONS OF STAINED SOILS AND PAD  
SHEFFIELD STEEL  
JOLIET FACILITY

## 2. SAMPLING APPROACH and RATIONALE

### 2.1 Overview of Approach and Rationale

The objectives of the investigation were to remove the petroleum-stained soils, to clean the petroleum staining from the concrete pad, and to determine whether the waste materials should have been managed as RCRA hazardous wastes.

### 2.2 Contaminants of Potential Interest

The contaminants of potential interest were limited to those contaminants that would make the waste materials RCRA hazardous wastes. Of the four potential hazardous waste characteristics, the only characteristic of interest was toxicity; the petroleum-impacted materials would not reasonably be expected to have the characteristics of reactivity, ignitibility, or corrosivity. This expectation is consistent with the generator's knowledge and the characteristics of the wastes routinely generated at the facility.

In order to determine whether the soils and cleaning waters exhibited the RCRA toxicity characteristic, a full scan of TCLP organics and TCLP metals was performed on samples. The TCLP parameters are listed in Table 2-1, along with their RCRA regulatory concentrations.

**TABLE 2-1**  
**TCLP PARAMETERS**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>
Benzene	0.5	Arsenic	5.0
Carbon tetrachloride	0.5	Barium	100.0
Chlorobenzene	100.0	Cadmium	1.0
Chloroform	6.0	Chromium	5.0
1,2-Dichloroethane	0.5	Lead	5.0
1,1-Dichloroethylene	0.7	Mercury	0.2
Methyl ethyl ketone	200.0	Selenium	1.0
Tetrachloroethylene	0.7	Silver	5.0
Trichloroethylene	0.5		
Vinyl chloride	0.2		
o-Cresol	200.0 <sup>a/</sup>		
m-Cresol	200.0 <sup>a/</sup>		
p-Cresol	200.0 <sup>a/</sup>		
1,4-Dichlorobenzene	7.5		
2,4-Dinitrotoluene	0.13 <sup>b/</sup>		
Hexachlorobenzene	0.13 <sup>b/</sup>		
Hexachlorobutadiene	0.5		
Hexachloroethane	3.0		
Nitrobenzene	2.0		
Pentachlorophenol	100.0		
Pyridine	5.0 <sup>b/</sup>		
2,4,5-Trichlorophenol	400.0		
2,4,6-Trichlorophenol	2.0		

a/ If o-, m-, and p-cresol concentrations cannot be differentiated, then the total cresol concentration is used. The regulatory level for total cresol is 200 mg/L.

b/ The quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.



### 3. INVESTIGATION FINDINGS and REMEDIAL ACTIONS

*[Note: Field work procedures are documented in Appendix A. Analytical result reports are provided in Appendix B. Disposal documentation is provided in Appendix C.]*

#### 3.1 Area Descriptions

##### 3.1.1 Former Oil Drum Accumulation Area

The "oil drum accumulation area" was an accumulation area for drums containing non-hazardous waste grease and oil-contaminated absorbent "pigs." The accumulation area was used for staging the drums before off-site disposal at Land and Lakes non-hazardous landfill. (Note: The area has not been used for drum accumulation since April 2000. In the future, oil drums will be accumulated within a containment area.)

The entire accumulation area was underlain with a concrete pad to avoid direct exposure of the drums to the ground. Some grease and oil stained the concrete pad and the adjacent ground surface to the east, as observed during USEPA's August 1999 inspection. The staining was the result of minor leaks and spills during routine drum transfer operations. The stained area of the pad measured approximately 45 feet by 20 feet. The stained area of soil measured approximately 18 square feet. Some of the stained-looking materials actually might have been mill scale.

##### 3.1.2 Oil Room / Gear Box Area

An out-of-use gear box was located outside of the "oil room." The gear box was set directly on the ground surface. (The gear box was removed April 2000 and was sold as scrap steel.)

Oils remaining in the gear box overflowed during storm events in 1999. The overflows stained the ground surface, as observed during USEPA's August 1999 inspection. The stained area of soil measured approximately 225 square feet. Some of the stained-looking materials actually might have been mill scale.

### 3.1.3 Mill Scale Cooling Tank Area

The "mill scale cooling tank" is used as a settling tank to remove mill scale and oil from waters used at the facility. The mill scale settles to the bottom the tank, then is scooped out, dried, and sold to a reclaim company. The oils are skimmed from the top of the tank, collected into drums, and disposed of off-site.

The adjacent ground surface directly to the south of the tank was stained with a material that appeared to be oil, as observed during USEPA's August 1999 inspection. The stained aea of soil measured approximately 675 square feet. Some of the stained-looking materials actually might have been mill scale.

## 3.2 Soil Investigation and Remediation Activities

During April/May 2000, the stained soils in each of the three areas were excavated, placed into a roll-off box, and disposed of off-site as non-hazardous waste.

Investigation Findings. Before excavation, the stained soils were sampled to determine whether they were RCRA hazardous wastes. The sample results confirmed that the soils were not hazardous wastes. Tables 3-1 through 3-3 present the results.

Remedial Actions. Complete removal of petroleum-stained soils was confirmed by screening the underlying soils for the presence of petroleum residuals. The screening included visual assessment, olfactory assessment, and use of a photoionization detector (PID); the PID readings are included on Tables 3-1 through 3-3.

Excavation of the soils continued until field screening confirmed that all petroleum-impacted soils were removed. In total, approximately 20 cubic yards (23.2 tons) of soil were removed and disposed of at Laraway Landfill. Upon completion, the excavations were backfilled with clean gravel.

### 3.3 Pad Investigation and Remediation Activities

During April/May 2000, the concrete pad was cleaned and the cleaning water/residue was disposed of off-site as non-hazardous waste.

Investigation Findings. Before disposal, the cleaning water was sampled to determine whether it was RCRA hazardous waste. The sample results confirmed that the cleaning water was not hazardous waste. Table 3-4 presents the results.

Remedial Actions. The concrete pad was scraped clean of residues, spray-washed with water at high-pressure, scrubbed with Alconox soap and brooms, then spray-rinsed with water at high pressure. A wet-vacuum was used to capture water during washing and rinsing.

The scraped residues were placed into a roll-off box and disposed of off-site (Laraway Landfill) as non-hazardous waste, along with stained soils excavated from the site. The cleaning water captured by the vacuum was drummed and disposed of off-site (Crest Environmental) as non-hazardous wastewater. Four drums (220 gallons of water) were disposed of at Crest Environmental.

**TABLE 3-1**  
**OIL DRUM ACCUMULATION AREA**  
**Soil Sample Results, 04/28/00**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>
Benzene	0.5	<0.10	Arsenic	5.0	<0.20
Carbon tetrachloride	0.5	<0.10	Barium	100.0	0.445
Chlorobenzene	100.0	<0.10	Cadmium	1.0	0.011
Chloroform	6.0	<0.10	Chromium	5.0	<0.040
1,2-Dichloroethane	0.5	<0.10	Lead	5.0	0.388
1,1-Dichloroethylene	0.7	<0.10	Mercury	0.2	<0.0002
Methyl ethyl ketone	200.0	<2.00	Selenium	1.0	<0.20
Tetrachloroethylene	0.7	<0.10	Silver	5.0	<0.050
Trichloroethylene	0.5	<0.10			
Vinyl chloride	0.2	<0.10			
Total Cresol	200.0	<0.10			
1,4-Dichlorobenzene	7.5	<0.10			
2,4-Dinitrotoluene	0.13	<0.10			
Hexachlorobenzene	0.13	<0.10			
Hexachlorobutadiene	0.5	<0.10			
Hexachloroethane	3.0	<0.10			
Nitrobenzene	2.0	<0.10			
Pentachlorophenol	100.0	<0.50			
Pyridine	5.0	<0.10			
2,4,5-Trichlorophenol	400.0	<0.50			
2,4,6-Trichlorophenol	2.0	<0.10			

PID Readings, ppm (10.2 eV PID)

Quadrant A: 0

Quadrant B: 0

Quadrant C: 0

Quadrant D: 0

**TABLE 3-2**  
**OIL ROOM / GEAR BOX AREA**  
**Soil Sample Results, 04/28/00**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>
Benzene	0.5	<0.10	Arsenic	5.0	<0.20
Carbon tetrachloride	0.5	<0.10	Barium	100.0	0.641
Chlorobenzene	100.0	<0.10	Cadmium	1.0	0.026
Chloroform	6.0	<0.10	Chromium	5.0	<0.040
1,2-Dichloroethane	0.5	<0.10	Lead	5.0	<0.200
1,1-Dichloroethylene	0.7	<0.10	Mercury	0.2	<0.0002
Methyl ethyl ketone	200.0	<2.00	Selenium	1.0	<0.20
Tetrachloroethylene	0.7	<0.10	Silver	5.0	<0.050
Trichloroethylene	0.5	<0.10			
Vinyl chloride	0.2	<0.10			
Total Cresol	200.0	<0.10			
1,4-Dichlorobenzene	7.5	<0.10			
2,4-Dinitrotoluene	0.13	<0.10			
Hexachlorobenzene	0.13	<0.10			
Hexachlorobutadiene	0.5	<0.10			
Hexachloroethane	3.0	<0.10			
Nitrobenzene	2.0	<0.10			
Pentachlorophenol	100.0	<0.50			
Pyridine	5.0	<0.10			
2,4,5-Trichlorophenol	400.0	<0.50			
2,4,6-Trichlorophenol	2.0	<0.10			

PID Readings, ppm (10.2 eV PID)

Quadrant A: 0

Quadrant B: 0

Quadrant C: 0

Quadrant D: 0

**TABLE 3-3**  
**MILL SCALE COOLING TANK AREA**  
**Soil Sample Results, 04/28/00**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>
Benzene	0.5	<0.10	Arsenic	5.0	<0.20
Carbon tetrachloride	0.5	<0.10	Barium	100.0	0.356
Chlorobenzene	100.0	<0.10	Cadmium	1.0	<0.010
Chloroform	6.0	<0.10	Chromium	5.0	<0.040
1,2-Dichloroethane	0.5	<0.10	Lead	5.0	<0.200
1,1-Dichloroethylene	0.7	<0.10	Mercury	0.2	<0.0002
Methyl ethyl ketone	200.0	<2.00	Selenium	1.0	<0.20
Tetrachloroethylene	0.7	<0.10	Silver	5.0	<0.050
Trichloroethylene	0.5	<0.10			
Vinyl chloride	0.2	<0.10			
Total Cresol	200.0	<0.10			
1,4-Dichlorobenzene	7.5	<0.10			
2,4-Dinitrotoluene	0.13	<0.10			
Hexachlorobenzene	0.13	<0.10			
Hexachlorobutadiene	0.5	<0.10			
Hexachloroethane	3.0	<0.10			
Nitrobenzene	2.0	<0.10			
Pentachlorophenol	100.0	<0.50			
Pyridine	5.0	<0.10			
2,4,5-Trichlorophenol	400.0	<0.50			
2,4,6-Trichlorophenol	2.0	<0.10			

PID Readings, ppm (10.2 eV PID)

Quadrant A: 0

Quadrant B: 0

Quadrant C: 0

Quadrant D: 0

**TABLE 3-4**  
**DRUM ACCUMULATION PAD**  
**Cleaning Water Sample Results, 04/28/00**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>	<b>Result, mg/L</b>
Benzene	0.5	<0.10	Arsenic	5.0	<0.20
Carbon tetrachloride	0.5	<0.10	Barium	100.0	0.618
Chlorobenzene	100.0	<0.10	Cadmium	1.0	0.013
Chloroform	6.0	<0.10	Chromium	5.0	<0.040
1,2-Dichloroethane	0.5	<0.10	Lead	5.0	0.654
1,1-Dichloroethylene	0.7	<0.10	Mercury	0.2	0.0008
Methyl ethyl ketone	200.0	<2.00	Selenium	1.0	<0.20
Tetrachloroethylene	0.7	<0.10	Silver	5.0	<0.050
Trichloroethylene	0.5	<0.10			
Vinyl chloride	0.2	<0.10			
Total Cresol	200.0	<0.10			
1,4-Dichlorobenzene	7.5	<0.10			
2,4-Dinitrotoluene	0.13	<0.10			
Hexachlorobenzene	0.13	<0.10			
Hexachlorobutadiene	0.5	<0.10			
Hexachloroethane	3.0	<0.10			
Nitrobenzene	2.0	<0.10			
Pentachlorophenol	100.0	<0.50			
Pyridine	5.0	<0.10			
2,4,5-Trichlorophenol	400.0	<0.50			
2,4,6-Trichlorophenol	2.0	<0.10			





Sheffield Steel Joliet Facility  
Joliet, Illinois

**SAMPLING and QA/QC PROTOCOL**  
**April 28, 2000**

**1. SOIL SAMPLE COLLECTION**

Sampling Method. Soil samples were collected using a stainless steel trowel. The samples were collected from within one foot of the ground surface, which was within the depth of petroleum staining.

Composite samples and grab samples were collected. Composite samples were collected for analysis of metals. The use of composite samples helped to assure representative sampling of the stained areas. Grab samples were collected for analysis of organics. Composite samples could not be collected for organics because the handling could release the volatile organic constituents.

For composite samples, each stained area was divided into four quadrants. A sample of the stained soil was collected from the center of each quadrant. The four quadrant samples were placed in a stainless steel bowl and mixed with the trowel, then the mixed sample was placed in the sample container. For grab samples, a sample of the stained soil was collected from the center of each quadrant and field-screened with a PID (as described below). A grab sample then was collected from the quadrant with the highest PID reading and placed in the sample container.

Field Screening. Samples were visually characterized at the time of collection. The characterization included visual inspection for soil type and color, water content, and petroleum contaminant-related materials.

Grab samples collected for volatile organic analysis also were field screened with a PID. The PID was used to screen the samples for the presence of VOCs using a closed-cup protocol. A sample of the soil was placed in a one-pint plastic cup, approximately half-full. A lid was placed on the cup and the cup was set aside for approximately 15 minutes in a warmed area to allow the

concentration of volatiles in the headspace to come into equilibrium with the concentration of volatiles in the soil. The lid was slit with a razor knife and the PID probe was inserted into the headspace.

The PID responses were provided in parts per million (ppm) readings. The PID meter has a detection range of 1 ppm to 2,000 ppm, and is calibrated to read in equivalent ppm of benzene. This headspace method allows detection of volatiles at relatively low detection levels, and the method is reproducible.

## 2. CLEANING WATER SAMPLE COLLECTION

Sampling Method. Cleaning water samples were collected using disposable bailers. The samples were collected as grab samples from the drums of water captured by the wet-vacuum.

Field Screening. Samples were visually characterized at the time of collection. The characterization included visual inspection for water color, residue content, and petroleum contaminant-related materials.

## 3. SAMPLING HANDLING AND IDENTIFICATION

### 3.1 Sample Preservation

Containers. Samples were placed in containers provided by the laboratory (clear glass quart jars for soil; amber glass quart jars for cleaning water). The containers met the minimum quality requirements set forth in USEPA "OSWER Directive No. 9240.0-05A, Specifications and Guidance for Contaminant-Free Sample Containers."

Additives. Samples did not require field preservation with chemical additives.

Temperature Control. All samples were maintained in coolers with ice. Samples were placed in the coolers as soon as possible after sample collection.

### 3.2 Sample Labels

Samples were identified by a sticker-label affixed to the container. The information was recorded in waterproof ink. The information recorded on the label included:

- Project name (Sheffield Steel)
- Sample location (e.g., Drum Acc Soil)
- Sample type (composite or grab)
- Date (04/28/00)
- Initials of sampler (STM)

### 3.3 Sample Packing and Shipping

The following procedures were used to assure the integrity of sample containers during shipping:

- Careful packing of sample containers in coolers (e.g., use of packing materials).
- Placement of each sample container in an individual plastic baggie to help assure containment, prevention of cross-contamination, and protection of labels.
- Double-bagging of ice to minimize potential for water damage to labels and/or seepage into containers.

### 3.4 Sample Custody

Chain-of-custody began as soon as a sample was collected. Once sample labels were placed on sample containers, the containers were documented on a chain-of-custody form. The laboratory provided the forms.

## 4. EQUIPMENT DECONTAMINATION

Decontamination of soil sampling equipment was performed in the following steps:

1. Tap water and Alconox wash and scrub.
2. Tap water rinse.
3. Distilled water rinse.
4. Methanol rinse.
5. Distilled water rinse.
6. Thorough air drying.

Decontamination was performed on site, in an area located away from the sampling activities. (Note: Decontamination of water sampling equipment was not necessary. The only sampling equipment used was disposable bailers.)

## **5. INVESTIGATION-DERIVED WASTE MANAGEMENT**

The investigation-derived wastes generated were excavated soils, cleaning waters and residues, and decontamination water.

The excavated soils and scraped residues were placed into a 20 cubic yard roll-off box. The box was lined with plastic and covered with a plastic/canvas tarp. The soils were disposed of off-site (Laraway Landfill) as non-hazardous waste. (May 24, 2000; Ticket No. 846819; 23.2 tons.)

The water cleaning captured by the wet-vacuum was drummed and disposed of off-site (Crest Environmental) as non-hazardous wastewater. (May 17, 2000; 220 gallons.)

A small volume of decontamination water was generated: approximately 0.5 gallon per soil sample. The decontamination water was discarded into the soil roll-off box upon completion of sampling activities.

## **6. DOCUMENTATION**

Field documentation included entries in a field log book and site photographs.

## 7. LABORATORY ANALYSIS

### 7.1 Illinois Data Quality Goals

The analytical data quality goals were as set forth in the Illinois Environmental Protection Agency (IEPA) "Analytical Quality Assurance Plan" (AQAP) for the Bureau of Land Site Remediation Program.

### 7.2 Analytical Methods and Detection Limits

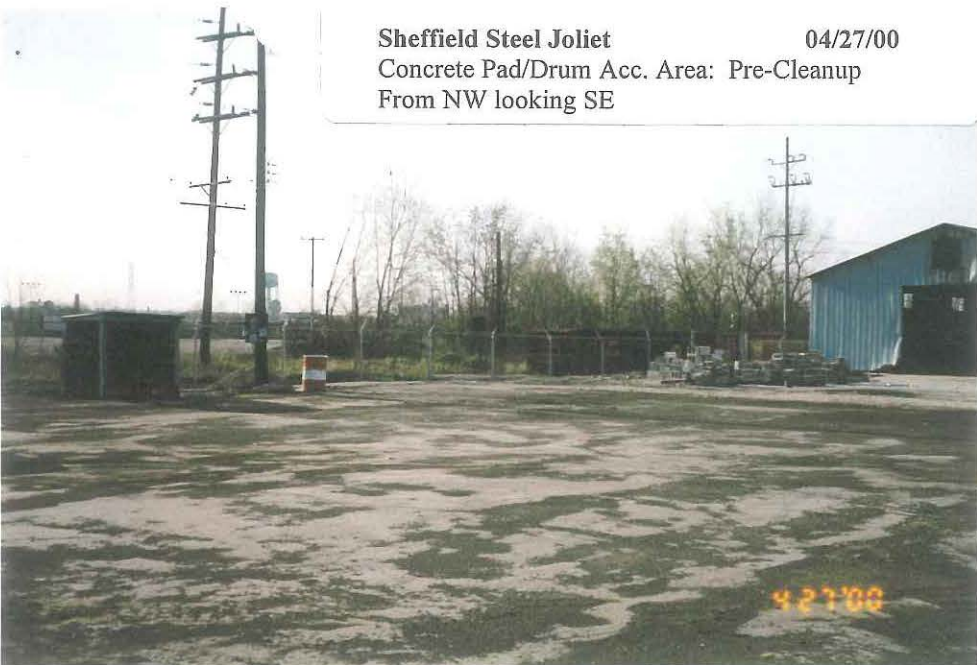
Parameters analyzed were TCLP organics and TCLP metals, per USEPA SW-846 guidance. The detection limits were less than or equal to the RCRA regulatory levels.

## 8. QUALITY ASSURANCE

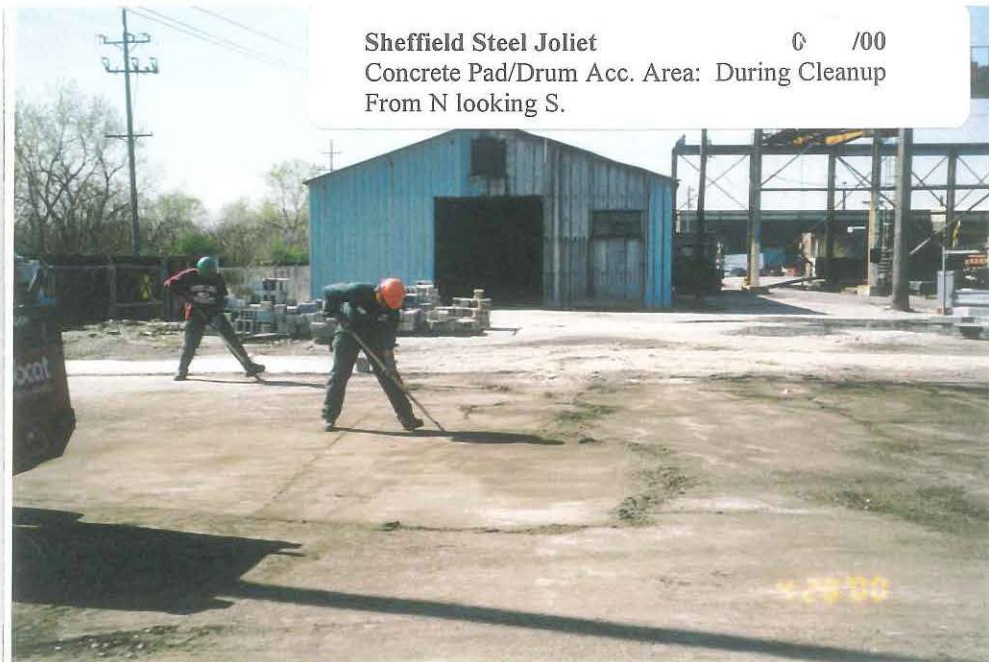
Laboratory quality assurance / quality control (QA/QC) was managed by the laboratory. The selected laboratory was Test America in Bartlett, Illinois.

The QA/QC procedures were as set forth in the IEPA AQAP. QA/QC included continuing calibration verification, blank-analysis, laboratory control standard analysis, and matrix spike/matrix spike duplicate (MS/MSD) samples, which the laboratory selected.

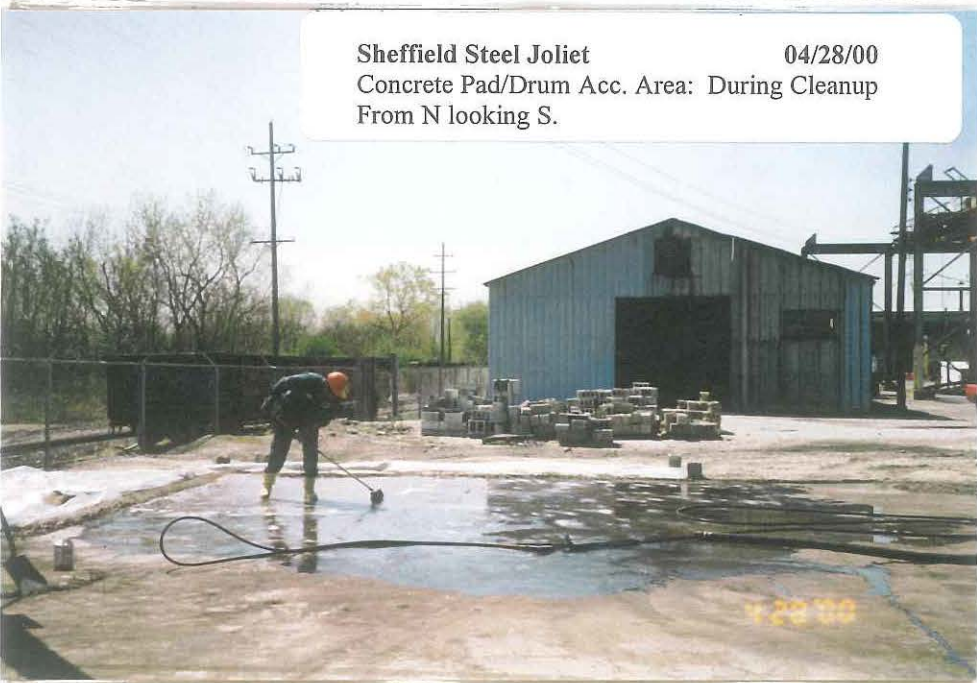
Sheffield Steel Joliet 04/27/00  
Concrete Pad/Drum Acc. Area: Pre-Cleanup  
From NW looking SE



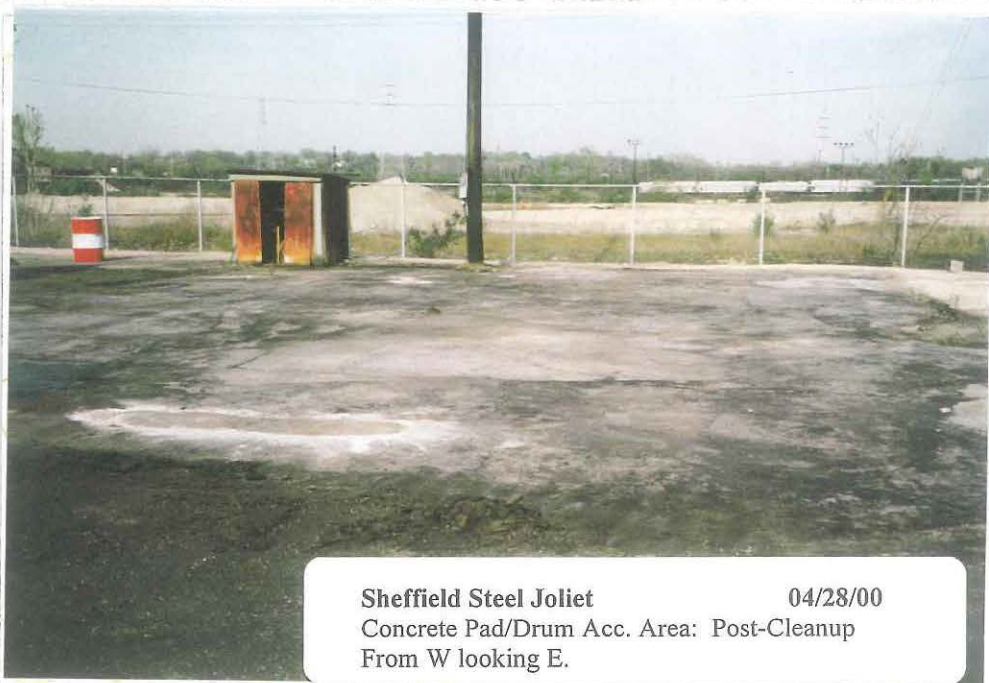
Sheffield Steel Joliet 04/27/00  
Concrete Pad/Drum Acc. Area: During Cleanup  
From N looking S.



Sheffield Steel Joliet 04/28/00  
Concrete Pad/Drum Acc. Area: During Cleanup  
From N looking S.



Sheffield Steel Joliet 04/28/00  
Concrete Pad/Drum Acc. Area: Post-Cleanup  
From W looking E.



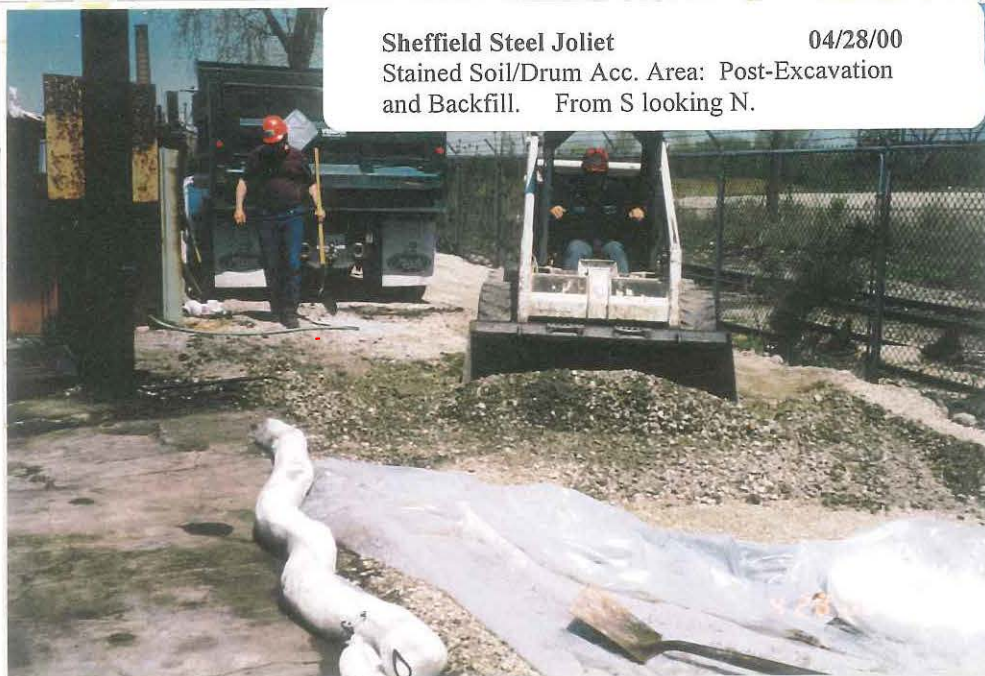




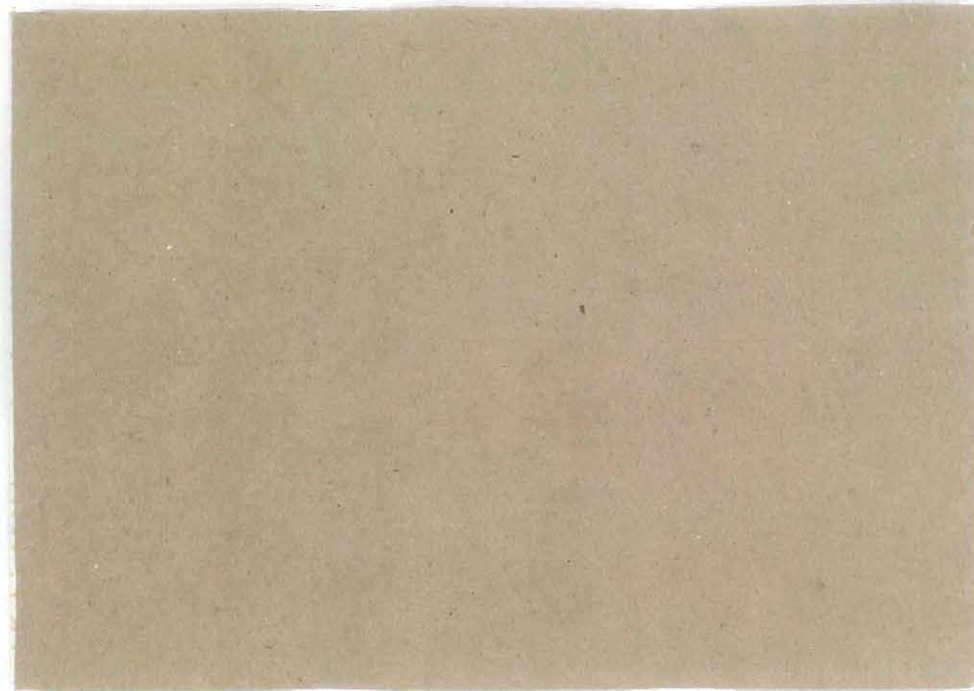
Sheffield Steel Joliet 04/27/00  
Stained Soil/Drum Acc. Area: Pre-Excavation  
From N looking S.



Sheffield Steel Joliet 4/27/00  
Stained Soil/Drum Acc. Area: Pre-Excavation  
From W looking E.

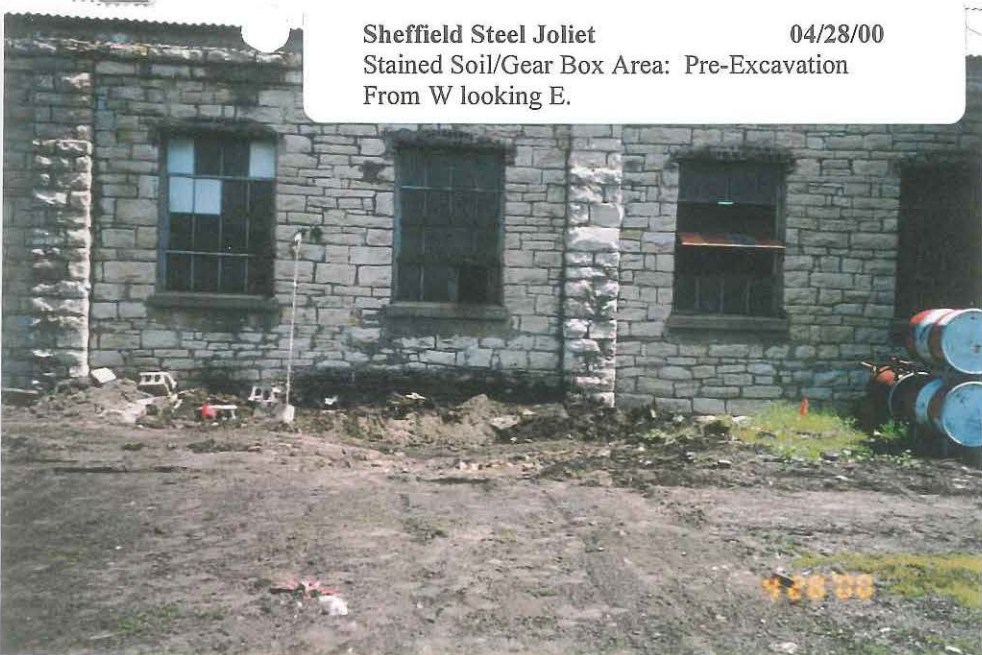


Sheffield Steel Joliet 04/28/00  
Stained Soil/Drum Acc. Area: Post-Excavation  
and Backfill. From S looking N.

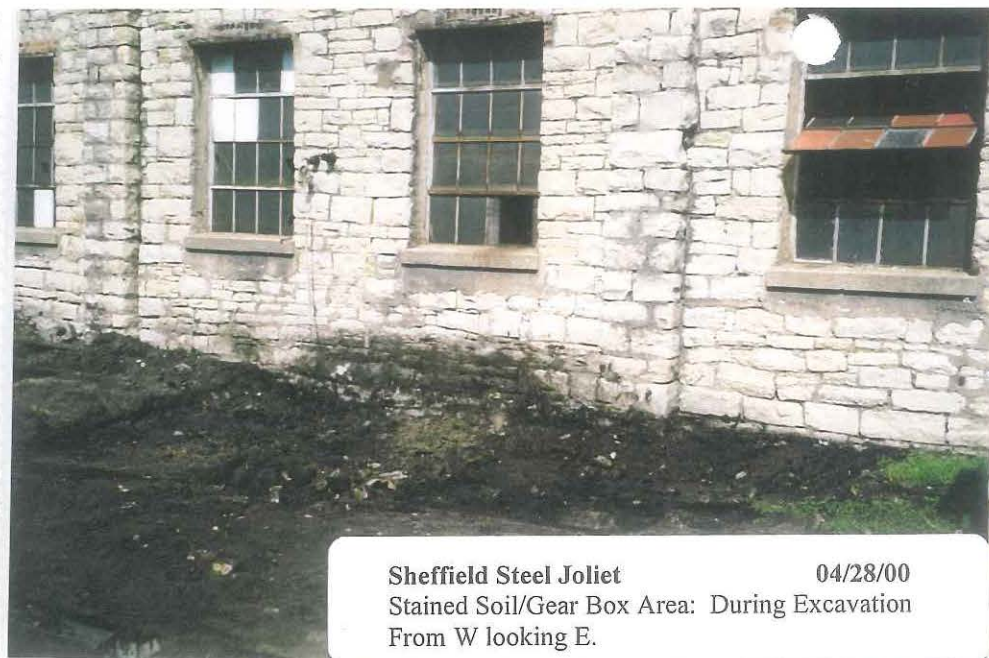




Sheffield Steel Joliet 04/28/00  
Stained Soil/Gear Box Area: Pre-Excavation  
From W looking E.



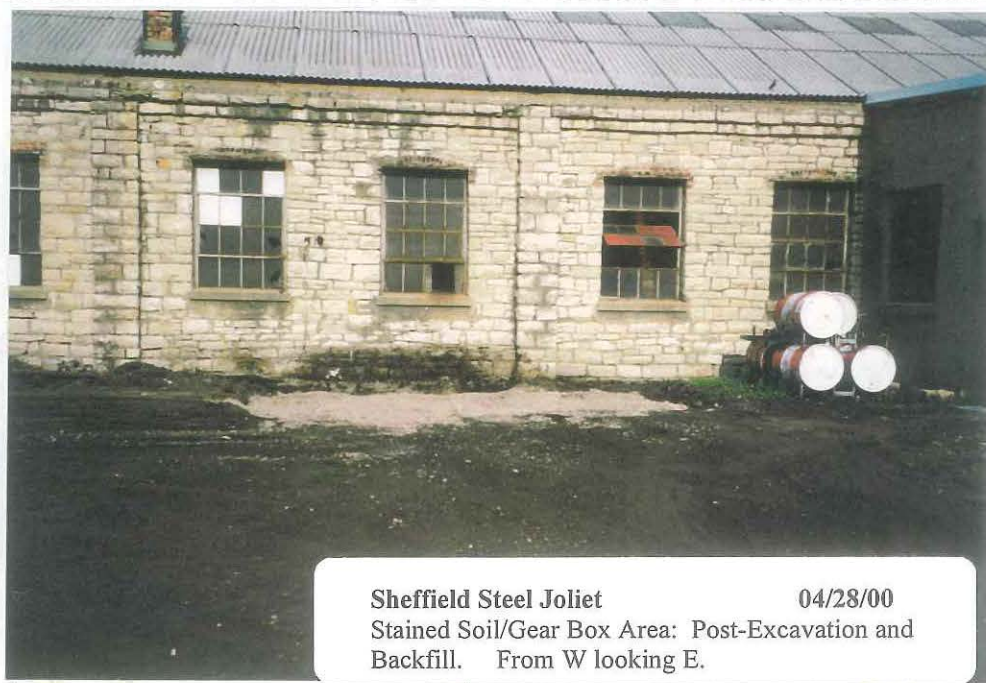
Sheffield Steel Joliet 04/28/00  
Stained Soil/Gear Box Area: During Excavation  
From W looking E.



Sheffield Steel Joliet 04/28/00  
Stained Soil/Gear Box Area: During Excavation  
From W looking E.



Sheffield Steel Joliet 04/28/00  
Stained Soil/Gear Box Area: Post-Excavation and  
Backfill. From W looking E.







Sheffield Steel Joliet 04/28/00  
Stained Soil/Cool. Tank Area: Pre-Excavation  
From W looking E.



Sheffield Steel Joliet 04/28/00  
Stained Soil/Cool. Tank Area: During Excavation  
From S looking N.



Sheffield Steel Joliet 04/28/00  
Stained Soil/Cool. Tank Area: Post-Excavation  
and Backfill. From W looking E.



Sheffield Steel Joliet 04/28/00  
Excavated Soil in 20 yd Roll-Off Box.  
At Cooling Tank Area. From N looking S.



# TestAmerica

INCORPORATED

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Job Number: 00.04376

IEPA Cert. No.: 100221  
WDNR Cert. No.: 999447130

Enclosed is the Analytical and Quality Control reports for the following samples submitted to Bartlett Division of TestAmerica for analysis.

Project Description: Sheffield STL

Sample Number	Sample Description	Date Taken	Date Received
577720	Pad Water	04/28/2000	05/01/2000
577721	Drum Acc Soil (Comp)	04/28/2000	05/01/2000
577722	Gear Box Soil (Comp)	04/28/2000	05/01/2000
577723	Cool Tank Soil (Comp)	04/28/2000	05/01/2000
577724	Drum Acc Soil (Grab)	04/28/2000	05/01/2000
577725	Gear Box Soil (Grab)	04/28/2000	05/01/2000
577726	Cool Tank Soil (Grab)	04/28/2000	05/01/2000

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow TestAmerica Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. TestAmerica has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

  
Mary Pearson  
Project Manager

Page 1 of 22



## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577720

Job No.: 00.04376

Sample Description: Pad Water  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP, ZHE Volatiles Prep	Leached			05/02/2000		kmb	728	SW 1311
TCLP Organic Prep	Leached			05/02/2000		kmb	617	SW 1311
TCLP Metals Extraction	Leached			05/02/2000		kmb	1189	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4923	SW 6010B
TCLP-Barium, ICP	0.618		mg/L	05/09/2000	0.020	kdw	3097 4924	SW 6010B
TCLP-Cadmium, ICP	0.013		mg/L	05/09/2000	0.010	kdw	3097 5809	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	05/09/2000	0.040	kdw	3097 4913	SW 6010B
TCLP-Lead, ICP	0.654		mg/L	05/09/2000	0.200	kdw	3097 5118	SW 6010B
TCLP-Mercury, CVAA	0.0008		mg/L	05/04/2000	0.0002	vgm	1517 1372	SW 7470A
TCLP-Selenium, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4729	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	05/09/2000	0.050	kdw	3097 5128	SW 6010B
Prep, BNA Extract (TCLP)	Extracted			05/04/2000		jjh	771	SW 3510C
TCLP-ACID COMPOUNDS 8270								
TCLP-Cresols, Total	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-o-Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-m&p Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pentachlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,5-Trichlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,6-Trichlorophenol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Phenol-d6	32.5		%	05/12/2000	6-59	keh	771 1753	SW 8270C
Surr: 2-Fluorophenol	43.0		%	05/12/2000	12-81	keh	771 1753	SW 8270C
Surr: 2,4,6-Tribromophenol	80.0		%	05/12/2000	27-137	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577720

Job No.: 00.04376

Sample Description: Pad Water  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP-VOLATILES 8260								
TCLP-Benzene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Carbon Tetrachloride	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Chlorobenzene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Chloroform	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-1,2-Dichloroethane	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-1,1-Dichloroethene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Methyl Ethyl Ketone	<2.0		mg/L	05/03/2000	2.0	dap	728 3598	SW 8260B
TCLP-Tetrachloroethene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Trichloroethene	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
TCLP-Vinyl Chloride	<0.10		mg/L	05/03/2000	0.10	dap	728 3598	SW 8260B
Surr: Dibromofluoromethane	102.0		%	05/03/2000	77-121	dap	728 3598	SW 8260B
Surr: Toluene-d8	102.0		%	05/03/2000	85-115	dap	728 3598	SW 8260B
Surr: Bromofluorobenzene	100.0		%	05/03/2000	76-120	dap	728 3598	SW 8260B
TCLP BASE NEUTRAL COMPOUNDS								
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachloroethane	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Nitrobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobutadiene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-2,4-Dinitrotoluene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pyridine	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Nitrobenzene-d5	81.0		%	05/12/2000	27-118	keh	771 1753	SW 8270C
Surr: 2-Fluorobiphenyl	70.0		%	05/12/2000	29-109	keh	771 1753	SW 8270C
Surr: Terphenyl-d14	26.0		%	05/12/2000	31-123	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577721

Job No.: 00.04376

Sample Description: Drum Acc Soil (Comp)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	Leached			05/02/2000		kmb	1189	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4923	SW 6010B
TCLP-Barium, ICP	0.445		mg/L	05/09/2000	0.020	kdw	3097 4924	SW 6010B
TCLP-Cadmium, ICP	0.011		mg/L	05/09/2000	0.010	kdw	3097 5809	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	05/09/2000	0.040	kdw	3097 4913	SW 6010B
TCLP-Lead, ICP	0.388		mg/L	05/09/2000	0.200	kdw	3097 5118	SW 6010B
TCLP-Mercury, CVAA	<0.0002		mg/L	05/04/2000	0.0002	vgm	1517 1372	SW 7470A
TCLP-Selenium, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4729	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	05/09/2000	0.050	kdw	3097 5128	SW 6010B



## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577722

Job No.: 00.04376

Sample Description: Gear Box Soil (Comp)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	Leached			05/02/2000		kmb	1189	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4923	SW 6010B
TCLP-Barium, ICP	0.641		mg/L	05/09/2000	0.020	kdw	3097 4924	SW 6010B
TCLP-Cadmium, ICP	0.026		mg/L	05/09/2000	0.010	kdw	3097 5809	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	05/09/2000	0.040	kdw	3097 4913	SW 6010B
TCLP-Lead, ICP	<0.200		mg/L	05/09/2000	0.200	kdw	3097 5118	SW 6010B
TCLP-Mercury, CVAA	<0.0002		mg/L	05/04/2000	0.0002	vgm	1517 1372	SW 7470A
TCLP-Selenium, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4729	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	05/09/2000	0.050	kdw	3097 5128	SW 6010B

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577723

Job No.: 00.04376

Sample Description: Cool Tank Soil (Comp)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP Metals Extraction	Leached			05/02/2000		kmb	1189	SW 1311
TCLP-Arsenic, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4923	SW 6010B
TCLP-Barium, ICP	0.356		mg/L	05/09/2000	0.020	kdw	3097 4924	SW 6010B
TCLP-Cadmium, ICP	<0.010		mg/L	05/09/2000	0.010	kdw	3097 5809	SW 6010B
TCLP-Chromium, ICP	<0.040		mg/L	05/09/2000	0.040	kdw	3097 4913	SW 6010B
TCLP-Lead, ICP	<0.200		mg/L	05/09/2000	0.200	kdw	3097 5118	SW 6010B
TCLP-Mercury, CVAA	<0.0002		mg/L	05/04/2000	0.0002	vgm	1517 1372	SW 7470A
TCLP-Selenium, ICP	<0.20		mg/L	05/09/2000	0.20	kdw	3097 4729	SW 6010B
TCLP-Silver, ICP	<0.050		mg/L	05/09/2000	0.050	kdw	3097 5128	SW 6010B



## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577724

Job No.: 00.04376

Sample Description: Drum Acc Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP, ZHE Volatiles Prep	Leached			05/02/2000		kmb	728	SW 1311
TCLP Organic Prep	Leached			05/02/2000		kmb	617	SW 1311
Prep, BNA Extract (TCLP)	Extracted			05/04/2000		jjh	771	SW 3510C
TCLP-ACID COMPOUNDS 8270								
TCLP-Cresols, Total	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-o-Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-m&p Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pentachlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,5-Trichlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,6-Trichlorophenol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Phenol-d6	32.5		%	05/12/2000	6-59	keh	771 1753	SW 8270C
Surr: 2-Fluorophenol	47.5		%	05/12/2000	12-81	keh	771 1753	SW 8270C
Surr: 2,4,6-Tribromophenol	87.5		%	05/12/2000	27-137	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577724

Job No.: 00.04376

Sample Description: Drum Acc Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP-VOLATILES 8260								
TCLP-Benzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Carbon Tetrachloride	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Chlorobenzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Chloroform	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,2-Dichloroethane	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,1-Dichloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Methyl Ethyl Ketone	<2.0		mg/L	05/05/2000	2.0	mjo	728 3599	SW 8260B
TCLP-Tetrachloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Trichloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Vinyl Chloride	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
Surr: Dibromofluoromethane	108.0		%	05/05/2000	77-121	mjo	728 3599	SW 8260B
Surr: Toluene-d8	100.0		%	05/05/2000	85-115	mjo	728 3599	SW 8260B
Surr: Bromofluorobenzene	102.0		%	05/05/2000	76-120	mjo	728 3599	SW 8260B

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577724

Job No.: 00.04376

Sample Description: Drum Acc Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP BASE NEUTRAL COMPOUNDS								
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachloroethane	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Nitrobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobutadiene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-2,4-Dinitrotoluene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pyridine	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Nitrobenzene-d5	75.0		%	05/12/2000	27-118	keh	771 1753	SW 8270C
Surr: 2-Fluorobiphenyl	77.0		%	05/12/2000	29-109	keh	771 1753	SW 8270C
Surr: Terphenyl-d14	83.0		%	05/12/2000	31-123	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577725

Job No.: 00.04376

Sample Description: Gear Box Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP, ZHE Volatiles Prep	Leached			05/02/2000		kmb	728	SW 1311
TCLP Organic Prep	Leached			05/02/2000		kmb	617	SW 1311
Prep, BNA Extract (TCLP)	Extracted			05/04/2000		jjh	771	SW 3510C
TCLP-ACID COMPOUNDS 8270								
TCLP-Cresols, Total	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-o-Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-m&p Cresol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pentachlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,5-Trichlorophenol	<0.50		mg/L	05/12/2000	0.50	keh	771 1753	SW 8270C
TCLP-2,4,6-Trichlorophenol	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Phenol-d6	38.0		%	05/12/2000	6-59	keh	771 1753	SW 8270C
Surr: 2-Fluorophenol	52.5		%	05/12/2000	12-81	keh	771 1753	SW 8270C
Surr: 2,4,6-Tribromophenol	74.5		%	05/12/2000	27-137	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577725

Job No.: 00.04376

Sample Description: Gear Box Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP-VOLATILES 8260								
TCLP-Benzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Carbon Tetrachloride	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Chlorobenzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Chloroform	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,2-Dichloroethane	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-1,1-Dichloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Methyl Ethyl Ketone	<2.0		mg/L	05/05/2000	2.0	mjo	728 3599	SW 8260B
TCLP-Tetrachloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Trichloroethene	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
TCLP-Vinyl Chloride	<0.10		mg/L	05/05/2000	0.10	mjo	728 3599	SW 8260B
Surr: Dibromofluoromethane	108.0		%	05/05/2000	77-121	mjo	728 3599	SW 8260B
Surr: Toluene-d8	104.0		%	05/05/2000	85-115	mjo	728 3599	SW 8260B
Surr: Bromofluorobenzene	106.0		%	05/05/2000	76-120	mjo	728 3599	SW 8260B

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577725

Job No.: 00.04376

Sample Description: Gear Box Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP BASE NEUTRAL COMPOUNDS								
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachloroethane	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Nitrobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobutadiene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-2,4-Dinitrotoluene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Hexachlorobenzene	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
TCLP-Pyridine	<0.10		mg/L	05/12/2000	0.10	keh	771 1753	SW 8270C
Surr: Nitrobenzene-d5	76.0		%	05/12/2000	27-118	keh	771 1753	SW 8270C
Surr: 2-Fluorobiphenyl	74.0		%	05/12/2000	29-109	keh	771 1753	SW 8270C
Surr: Terphenyl-d14	76.0		%	05/12/2000	31-123	keh	771 1753	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577726

Job No.: 00.04376

Sample Description: Cool Tank Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP, ZHE Volatiles Prep	Leached			05/02/2000		kmb	728	SW 1311
TCLP Organic Prep	Leached			05/02/2000		kmb	617	SW 1311
Prep, BNA Extract (TCLP)	Extracted			05/04/2000		jjh	771	SW 3510C
TCLP-ACID COMPOUNDS 8270								
TCLP-Cresols, Total	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-o-Cresol	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-m&p Cresol	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Pentachlorophenol	<0.50		mg/L	05/11/2000	0.50	keh	771 1752	SW 8270C
TCLP-2,4,5-Trichlorophenol	<0.50		mg/L	05/11/2000	0.50	keh	771 1752	SW 8270C
TCLP-2,4,6-Trichlorophenol	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
Surr: Phenol-d6	35.0		%	05/11/2000	6-59	keh	771 1752	SW 8270C
Surr: 2-Fluorophenol	47.5		%	05/11/2000	12-81	keh	771 1752	SW 8270C
Surr: 2,4,6-Tribromophenol	71.5		%	05/11/2000	27-137	keh	771 1752	SW 8270C

## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577726

Job No.: 00.04376

Sample Description: Cool Tank Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP-VOLATILES 8260								
TCLP-Benzene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Carbon Tetrachloride	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Chlorobenzene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Chloroform	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-1,2-Dichloroethane	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-1,1-Dichloroethene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Methyl Ethyl Ketone	<2.0		mg/L	05/05/2000	0.40	mjo	728 3599	SW 8260B
TCLP-Tetrachloroethene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Trichloroethene	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
TCLP-Vinyl Chloride	<0.10		mg/L	05/05/2000	0.020	mjo	728 3599	SW 8260B
Surr: Dibromofluoromethane	106.0		%	05/05/2000	77-121	mjo	728 3599	SW 8260B
Surr: Toluene-d8	102.0		%	05/05/2000	85-115	mjo	728 3599	SW 8260B
Surr: Bromofluorobenzene	102.0		%	05/05/2000	76-120	mjo	728 3599	SW 8260B



## ANALYTICAL REPORT

Ms. Sarah Monette  
HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525

05/15/2000

Sample No. : 577726

Job No.: 00.04376

Sample Description: Cool Tank Soil (Grab)  
Sheffield STL

Date Taken: 04/28/2000  
Time Taken:  
IEPA Cert. No. 100221

Date Received: 05/01/2000  
Time Received: 16:00  
WDNR Cert. No. 999447130

Parameter	Result	Flag	Units	Date Analyzed	Reporting Limit	Analyst	Batch No. Prep/Run	Analytical Method
TCLP BASE NEUTRAL COMPOUNDS								
TCLP-1,4-Dichlorobenzene	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Hexachloroethane	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Nitrobenzene	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Hexachlorobutadiene	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-2,4-Dinitrotoluene	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Hexachlorobenzene	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
TCLP-Pyridine	<0.10		mg/L	05/11/2000	0.10	keh	771 1752	SW 8270C
Surr: Nitrobenzene-d5	75.0		%	05/11/2000	27-118	keh	771 1752	SW 8270C
Surr: 2-Fluorobiphenyl	71.0		%	05/11/2000	29-109	keh	771 1752	SW 8270C
Surr: Terphenyl-d14	94.0		%	05/11/2000	31-123	keh	771 1752	SW 8270C

## QUALITY CONTROL REPORT

### CONTINUING CALIBRATION VERIFICATION

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Run	CCV		Percent
	Batch Number	True Conc.	Conc. Found	
TCLP-Arsenic, ICP	4923	2.00	2.07	103.5
TCLP-Barium, ICP	4924	2.00	1.97	98.5
TCLP-Cadmium, ICP	5809	1.00	0.980	98.0
TCLP-Chromium, ICP	4913	2.00	1.98	99.0
TCLP-Lead, ICP	5118	2.00	1.96	98.0
TCLP-Mercury, CVAA	1372	0.0025	0.00253	101.2
TCLP-Selenium, ICP	4729	2.00	1.96	98.0
TCLP-ACID COMPOUNDS 8270				
TCLP-2,4,6-Trichlorophenol	1752	50.0	51.0	102.0
TCLP-ACID COMPOUNDS 8270				
TCLP-2,4,6-Trichlorophenol	1753	50.0	52.0	104.0
TCLP-VOLATILES 8260				
TCLP-Benzene	3598	50.0	47.0	94.0
TCLP-Chloroform	3598	50.0	52.0	104.0
TCLP-1,1-Dichloroethene	3598	50.0	49.0	98.0
TCLP-Vinyl Chloride	3598	50.0	42.0	84.0
TCLP-VOLATILES 8260				
TCLP-Benzene	3599	50.0	47.0	94.0
TCLP-Chloroform	3599	50.0	53.0	106.0
TCLP-1,1-Dichloroethene	3599	50.0	54.0	108.0
TCLP-Vinyl Chloride	3599	50.0	47.0	94.0
TCLP BASE NEUTRAL COMPOUNDS				
TCLP-1,4-Dichlorobenzene	1752	50.0	48.0	96.0
TCLP-Hexachlorobutadiene	1752	50.0	52.0	104.0
TCLP BASE NEUTRAL COMPOUNDS				
TCLP-1,4-Dichlorobenzene	1753	50.0	47.0	94.0
TCLP-Hexachlorobutadiene	1753	50.0	44.0	88.0

CCV - Continuing Calibration Verification

## QUALITY CONTROL REPORT

### BLANK ANALYSIS

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
TCLP-Arsenic, ICP	3097	4923	<0.20	mg/L	0.20	SW 6010B
TCLP-Arsenic, ICP	3097	4923	<0.20	mg/L	0.20	SW 6010B
TCLP-Barium, ICP	3097	4924	<0.020	mg/L	0.020	SW 6010B
TCLP-Barium, ICP	3097	4924	<0.020	mg/L	0.020	SW 6010B
TCLP-Cadmium, ICP	3097	5809	<0.010	mg/L	0.010	SW 6010B
TCLP-Cadmium, ICP	3097	5809	<0.010	mg/L	0.010	SW 6010B
TCLP-Chromium, ICP	3097	4913	<0.040	mg/L	0.040	SW 6010B
TCLP-Chromium, ICP	3097	4913	<0.040	mg/L	0.040	SW 6010B
TCLP-Lead, ICP	3097	5118	<0.100	mg/L	0.100	SW 6010B
TCLP-Lead, ICP	3097	5118	<0.200	mg/L	0.200	SW 6010B
TCLP-Mercury, CVAA	1517	1372	<0.0002	mg/L	0.0002	SW 7470A
TCLP-Selenium, ICP	3097	4729	<0.20	mg/L	0.20	SW 6010B
TCLP-Silver, ICP	3097	5128	<10	ug/L	10	SW 6010B
TCLP-Silver, ICP	3097	5128	<0.040	mg/L	0.040	SW 6010B
TCLP-Silver, ICP	3097	5128	<0.050	mg/L	0.050	SW 6010B
TCLP-ACID COMPOUNDS 8270						SW 8270C
TCLP-o-Cresol	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-m&p Cresol	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Pentachlorophenol	771	1750	<0.50	mg/L	0.50	SW 8270C
TCLP-2,4,5-Trichlorophenol	771	1750	<0.50	mg/L	0.50	SW 8270C
TCLP-2,4,6-Trichlorophenol	771	1750	<0.10	mg/L	0.10	SW 8270C
Surr: Phenol-d6	771	1750	38.0	%	6-59	SW 8270C
Surr: 2-Fluorophenol	771	1750	52.5	%	12-81	SW 8270C
Surr: 2,4,6-Tribromophenol	771	1750	96.5	%	27-137	SW 8270C
TCLP-VOLATILES 8260						SW 8260B
TCLP-Benzene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-Carbon Tetrachloride		3598	<1.0	ug/L	1.0	SW 8260B

#### Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

## QUALITY CONTROL REPORT

### BLANK ANALYSIS

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
TCLP-Chlorobenzene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-Chloroform		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-1,4-Dichlorobenzene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-1,2-Dichloroethane		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-1,1-Dichloroethene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-Methyl Ethyl Ketone		3598	<20	ug/L	20	SW 8260B
TCLP-Tetrachloroethene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-Trichloroethene		3598	<1.0	ug/L	1.0	SW 8260B
TCLP-Vinyl Chloride		3598	<2.0	ug/L	2.0	SW 8260B
Surr: Dibromofluoromethane		3598	102.0	%	75-124	SW 8260B
Surr: Toluene-d8		3598	102.0	%	84-115	SW 8260B
Surr: Bromofluorobenzene		3598	98.0	%	79-122	SW 8260B
TCLP-VOLATILES 8260						SW 8260B
TCLP-Benzene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Carbon Tetrachloride		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Chlorobenzene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Chloroform		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-1,4-Dichlorobenzene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-1,2-Dichloroethane		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-1,1-Dichloroethene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Methyl Ethyl Ketone		3599	<20	ug/L	20	SW 8260B
TCLP-Tetrachloroethene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Trichloroethene		3599	<1.0	ug/L	1.0	SW 8260B
TCLP-Vinyl Chloride		3599	<2.0	ug/L	2.0	SW 8260B
Surr: Dibromofluoromethane		3599	104.0	%	75-124	SW 8260B
Surr: Toluene-d8		3599	100.0	%	84-115	SW 8260B
Surr: Bromofluorobenzene		3599	100.0	%	79-122	SW 8260B

#### Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

## QUALITY CONTROL REPORT

### BLANK ANALYSIS

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
TCLP BASE NEUTRAL COMPOUNDS						SW 8270C
TCLP-1,4-Dichlorobenzene	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Hexachloroethane	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Nitrobenzene	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Hexachlorobutadiene	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-2,4-Dinitrotoluene	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Hexachlorobenzene	771	1750	<0.10	mg/L	0.10	SW 8270C
TCLP-Pyridine	771	1750	<0.10	mg/L	0.10	SW 8270C
Surr: Nitrobenzene-d5	771	1750	73.0	%	27-118	SW 8270C
Surr: 2-Fluorobiphenyl	771	1750	77.0	%	29-109	SW 8270C
Surr: Terphenyl-d14	771	1750	94.0	%	31-123	SW 8270C

#### Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

## QUALITY CONTROL REPORT

### LABORATORY CONTROL STANDARD

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found	LCS % Recovery
TCLP-Arsenic, ICP	3097	4923	0.500	0.544	108.8
TCLP-Arsenic, ICP	3097	4923	0.500	0.544	108.8
TCLP-Barium, ICP	3097	4924	0.500	0.496	99.2
TCLP-Barium, ICP	3097	4924	0.500	0.496	99.2
TCLP-Cadmium, ICP	3097	5809	0.500	0.505	101.0
TCLP-Cadmium, ICP	3097	5809	0.500	0.505	101.0
TCLP-Chromium, ICP	3097	4913	0.500	0.516	103.2
TCLP-Chromium, ICP	3097	4913	0.500	0.516	103.2
TCLP-Lead, ICP	3097	5118	0.500	0.507	101.4
TCLP-Lead, ICP	3097	5118	0.500	0.507	101.4
TCLP-Mercury, CVAA	1517	1372	0.0025	0.00241	96.4
TCLP-Selenium, ICP	3097	4729	0.500	0.497	99.4
TCLP-Silver, ICP	3097	5128	500	479	95.8
TCLP-Silver, ICP	3097	5128	0.500	0.479	95.8
TCLP-Silver, ICP	3097	5128	0.500	0.479	95.8
TCLP-ACID COMPOUNDS 8270					
TCLP-o-Cresol	771	1750	80	63	78.8
TCLP-m&p Cresol	771	1750	80	63	78.8
TCLP-Pentachlorophenol	771	1750	80	77	96.3
TCLP-2,4,5-Trichlorophenol	771	1750	80	77	96.3
TCLP-2,4,6-Trichlorophenol	771	1750	80	76	95.0
Surr: Phenol-d6	771	1750	200	87	43.5
Surr: 2-Fluorophenol	771	1750	200	117	58.5
Surr: 2,4,6-Tribromophenol	771	1750	200	204	102.0

## QUALITY CONTROL REPORT

### LABORATORY CONTROL STANDARD

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found	LCS % Recovery
TCLP-VOLATILES 8260					
TCLP-Benzene		3598	20.0	20.0	100.0
TCLP-Chlorobenzene		3598	20.0	22.0	110.0
TCLP-1,1-Dichloroethene		3598	20.0	22.0	110.0
TCLP-Trichloroethene		3598	20.0	22.0	110.0
Surr: Dibromofluoromethane		3598	50.0	52.0	104.0
Surr: Toluene-d8		3598	50.0	51.0	102.0
Surr: Bromofluorobenzene		3598	50.0	55.0	110.0
TCLP-VOLATILES 8260					
TCLP-Benzene		3599	20.0	21.0	105.0
TCLP-Chlorobenzene		3599	20.0	21.0	105.0
TCLP-1,1-Dichloroethene		3599	20.0	24.0	120.0
TCLP-Trichloroethene		3599	20.0	19.0	95.0
Surr: Dibromofluoromethane		3599	50.0	51.0	102.0
Surr: Toluene-d8		3599	50.0	50.0	100.0
Surr: Bromofluorobenzene		3599	50.0	50.0	100.0
TCLP BASE NEUTRAL COMPOUNDS					
TCLP-1,4-Dichlorobenzene	771	1750	80	46	57.5
TCLP-Hexachloroethane	771	1750	80	41	51.3
TCLP-Nitrobenzene	771	1750	80	72	90.0
TCLP-Hexachlorobutadiene	771	1750	80	38	47.5
TCLP-2,4-Dinitrotoluene	771	1750	80	72	90.0
TCLP-Hexachlorobenzene	771	1750	80	76	95.0
TCLP-Pyridine	771	1750	80	42	52.5
Surr: Nitrobenzene-d5	771	1750	100	84	84.0
Surr: 2-Fluorobiphenyl	771	1750	100	80	80.0
Surr: Terphenyl-d14	771	1750	100	98	98.0

## QUALITY CONTROL REPORT

### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

HUFF & HUFF INC.  
512 West Burlington  
Suite 100  
LaGrange, IL 60525  
Ms. Sarah Monette

05/15/2000

Job Number: 00.04376

Analyte	Prep	Run	Matrix					MSD				
	Batch	Batch	Spike	Sample	Spike	Percent	MSD	Spike	Percent	MS/MSD		
	Number	Number	Result	Result	Amount	Units	Recovery	Result	Amount	Units	Recovery	RPD
TCLP-Cadmium, ICP	3097	5809	0.461	<0.005	0.500	mg/L	92.2	0.467	0.500	mg/L	93.4	1.3
TCLP-Chromium, ICP	3097	4914	0.480	<0.040	0.500	mg/L	96.0	0.495	0.500	mg/L	99.0	3.1
TCLP-Mercury, CVAA	1517	1372	0.00238	<0.0002	0.0025	mg/L	95.2	0.0023	0.0025	mg/L	92.8	2.6
TCLP-VOLATILES 8260												
TCLP-Benzene		3598	18	<1.0	20.0	ug/L	90.0	18	20.0	ug/L	90.0	0.0
TCLP-Chlorobenzene		3598	19	<1.0	20.0	ug/L	95.0	18	20.0	ug/L	90.0	5.4
TCLP-1,1-Dichloroethene		3598	20	<1.0	20.0	ug/L	100.0	20	20.0	ug/L	100.0	0.0
TCLP-Trichloroethene		3598	21	<1.0	20.0	ug/L	105.0	20	20.0	ug/L	100.0	4.9

NOTE: Matrix Spike Samples may not be samples from this job.

#### Advisory Control Limits for MS/MSDs:

For Inorganic Parameters and GC Volatiles, the spike recovery should be 75 - 125% if the spike added value was greater than or equal to one fourth of the sample result value. If not, the control limits are not established. The RPD for the MS/MSD pair should be less than 20.

MS = Matrix Spike

MSD = Matrix Spike Duplicate

RPD = Relative Percent Difference

RPD calculations are performed on the Percent Recovery calculated from the observed Matrix spike and Matrix Spike Duplicate results.



# TestAmerica

INCORPORATED

TestAmerica, Bartlett Division

## KEY TO ABBREVIATIONS and METHOD REFERENCES

<	: Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	: Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	: Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	: Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	: Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
TCLP	: These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
Surr:	: These initials are the abbreviation for surrogate. Surrogates are compounds that are chemically similar to the compounds of interest. They are part of the method quality control requirements.
%	: Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
ICP	: Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	: Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	: Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	: Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

## Method References

- (1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.
- (2) ASTM "American Society for Testing Materials"
- (3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.
- (4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.
- (5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.
- (6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.
- (7) See "Methods for the Determination of Metals in Environmental Samples", Supplement I EPA-600/R-94/111, May 1994.

# TestAmerica

INCORPORATED

- (8) See "Standard Methods for the Examination of Water and Wastewater", 18th Ed., APHA, 1992.
- (9) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986, Including Updates I and II.
- (10) This method is from the 2nd Edition of "Test Methods for Evaluating Solid Waste", USEPA SW-846. It has been dropped from the 3rd Edition, 1986.

Relinquished By: <u>Sylvia Nnette</u>	Date: <u>5/1/00</u> Time: <u>1510</u>	Received By: <u>[Signature]</u>	Date: <u>5/1/00</u> Time: <u>1510</u>	<b>LAB USE ONLY:</b>  Custody Seal: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> N/A Bottles Supplied by TA: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Relinquished By: <u>[Signature]</u>	Date: <u>5/1/00</u> Time: <u>1600</u>	Received By: <u>P. Merrill</u>	Date: <u>5/1/00</u> Time: <u>1600</u>	
Relinquished By:	Date: Time:	Received By:	Date: Time:	
Relinquished By:	Date: Time:	Received By:	Date: Time:	

## APPENDIX C

GTS 100

## LARAWAY RECYCLING &amp; DISPOSAL FACILITY

12-JUL-00

Profile Detail Report

1:49 PM

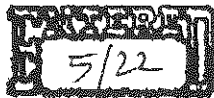
Date Range: 05/01/2000 - 06/30/2000

All Trucks, Customer:0000146, Profile:PB7641

Date	Ticket / Manifest	Time Out	Code	Commodity Tkt Yds	Fee	Landfill Yards	Tons	Total Fees
Profile: PB7641			Customer: SHEFFIELD STEEL - 0000146			Generator: SHEFFIELD STEEL		
5/24/2000	846819	5/24/2000 9:41:25 AM				20.00	23.180	\$533.14
			600	20.00	\$533.14			

Ticket Count:	1					20.00	23.180	\$533.14
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So's  
Brooke



## GENERATOR'S WASTE PROFILE SHEET

Profile Number: WMS

PB-7641

Service Agreement on File? ☒ YES ☐ NO

Profile History

☐ General

☒ Initial

☐ Non-Hazardous ☒ Hazardous ☐ RCRA ☐ CERCLA

Revised Date:

11-22-00

1. Generator Name: SHEFFIELD STEEL CORP 2. SIC Code:   
3. Facility Street Address: ONE INDUSTRY AVENUE 4. Phone: (915) 740-4920  
5. Facility City: IRVING 6. State/Province: TX  
7. Zip/Postal Code: 75039 8. Generator USEPA/Manifest ID #:   
9. County: DADE 10. State/Province ID #: 1970455619  
11. Customer Name: SHEFFIELD STEEL CORP 12. Customer Phone: (915) 740-4920  
13. Customer Contact: 214 30770 14. Customer Fax: 915-740-4909  
15. Billing Address: PO BOX 787, TOWER 3L DOWNTOWN

### 1. Description

a. Name of Waste: CONTAMINATED SOIL

b. Process Generating Waste: GENERAL CAUTION

8. Color	9. Density (lb/gal):	10. Physical state @ 70°F	11. Layers	12. Free liquid range
<u>BLACK</u>	<u>Heavy - 1.0</u>	<input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid	<input checked="" type="checkbox"/> Single Layer <input type="checkbox"/> Multi-layer	<u>2-3</u>
		<input type="checkbox"/> Gas <input type="checkbox"/> Sludge		
		<input type="checkbox"/> Other		
		<input type="checkbox"/> Powder / Dust		

13. Liquid Flash Point: ☒ 0-75°F ☐ 75-99°F ☐ 100-199°F ☐ 200-199°F ☐ 200°F ☐ Not applicable

14. Physical and Chemical Composition (List all constituents including wastes, debris, LULU's, and any treatment or stabilization products in any quantities of more than 1% by weight. Do not include constituents which are not hazardous or which are not listed in the manifest.)

15. Constituent	16. Concentration Range	17. Constituent	18. Concentration Range
<u>Soil, Pore</u>	<u>40-45%</u>		
<u>Oil</u>	<u>1-10%</u>		

19. ☐ Corrosive ☐ Toxic ☐ Flammable ☐ Volatile ☐ Oxidative ☐ Reacts with Water
20. Does the waste represented by this profile contain any of the constituents which require CERCLA notification? ☐ YES ☒ NO
21. Does the waste represented by this profile contain debris? (See Section 2.1.3) ☐ YES ☒ NO
22. Does the waste represented by this profile contain debris? ☐ YES ☒ NO
23. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
24. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
25. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
26. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
27. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
28. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
29. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
30. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
31. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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57. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
58. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
59. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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61. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
62. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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77. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
78. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
79. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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81. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
82. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
83. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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85. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
86. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
87. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
88. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
89. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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93. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
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95. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
96. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
97. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
98. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
99. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO
100. Does the waste represented by this profile contain debris which is the waste operation? ☐ YES ☒ NO

2. Quantity of Waste  
Estimated Annual Volume: 12 - 15 ☐ Tons ☒ Yards ☐ Cubic Yards ☐ Other (specify)

3. Shipping Information  
a. Packaging: ☒ Bulk Solid ☐ Bulk Liquid ☐ Drum ☐ Other   
b. Shipping Description:  Part ☐ Complete ☐ Quarter ☐ One ☐ Two ☐ Three ☐ Four ☐ Five ☐ Six ☐ Seven ☐ Eight ☐ Nine ☐ Ten ☐ Eleven ☐ Twelve ☐ Thirteen ☐ Fourteen ☐ Fifteen ☐ Sixteen ☐ Seventeen ☐ Eighteen ☐ Nineteen ☐ Twenty ☐ Twenty-one ☐ Twenty-two ☐ Twenty-three ☐ Twenty-four ☐ Twenty-five ☐ Twenty-six ☐ Twenty-seven ☐ Twenty-eight ☐ Twenty-nine ☐ Thirty ☐ Thirty-one ☐ Thirty-two ☐ Thirty-three ☐ Thirty-four ☐ Thirty-five ☐ Thirty-six ☐ Thirty-seven ☐ Thirty-eight ☐ Thirty-nine ☐ Forty ☐ Forty-one ☐ Forty-two ☐ Forty-three ☐ Forty-four ☐ Forty-five ☐ Forty-six ☐ Forty-seven ☐ Forty-eight ☐ Forty-nine ☐ Fifty ☐ Fifty-one ☐ Fifty-two ☐ Fifty-three ☐ Fifty-four ☐ Fifty-five ☐ Fifty-six ☐ Fifty-seven ☐ Fifty-eight ☐ Fifty-nine ☐ Sixty ☐ Sixty-one ☐ Sixty-two ☐ Sixty-three ☐ Sixty-four ☐ Sixty-five ☐ Sixty-six ☐ Sixty-seven ☐ Sixty-eight ☐ Sixty-nine ☐ Seventy ☐ Seventy-one ☐ Seventy-two ☐ Seventy-three ☐ Seventy-four ☐ Seventy-five ☐ Seventy-six ☐ Seventy-seven ☐ Seventy-eight ☐ Seventy-nine ☐ Eighty ☐ Eighty-one ☐ Eighty-two ☐ Eighty-three ☐ Eighty-four ☐ Eighty-five ☐ Eighty-six ☐ Eighty-seven ☐ Eighty-eight ☐ Eighty-nine ☐ Ninety ☐ Ninety-one ☐ Ninety-two ☐ Ninety-three ☐ Ninety-four ☐ Ninety-five ☐ Ninety-six ☐ Ninety-seven ☐ Ninety-eight ☐ Ninety-nine ☐ One hundred ☐ One hundred one ☐ One hundred two ☐ One hundred three ☐ One hundred four ☐ One hundred five ☐ One hundred six ☐ One hundred seven ☐ One hundred eight ☐ One hundred nine ☐ One hundred ten ☐ One hundred eleven ☐ One hundred twelve ☐ One hundred thirteen ☐ One hundred fourteen ☐ One hundred fifteen ☐ One hundred sixteen ☐ One hundred seventeen ☐ One hundred eighteen ☐ One hundred nineteen ☐ One hundred twenty ☐ One hundred twenty one ☐ One hundred twenty two ☐ One hundred twenty three ☐ One hundred twenty four ☐ One hundred twenty five ☐ One hundred twenty six ☐ One hundred twenty seven ☐ One hundred twenty eight ☐ One hundred twenty nine ☐ One hundred thirty ☐ One hundred thirty one ☐ One hundred thirty two ☐ One hundred thirty three ☐ One hundred thirty four ☐ One hundred thirty five ☐ One hundred thirty six ☐ One hundred thirty seven ☐ One hundred thirty eight ☐ One hundred thirty nine ☐ One hundred forty ☐ One hundred forty one ☐ One hundred forty two ☐ One hundred forty three ☐ One hundred forty four ☐ One hundred forty five ☐ One hundred forty six ☐ One hundred forty seven ☐ One hundred forty eight ☐ One hundred forty nine ☐ One hundred fifty ☐ One hundred fifty one ☐ One hundred fifty two ☐ One hundred fifty three ☐ One hundred fifty four ☐ One hundred fifty five ☐ One hundred fifty six ☐ One hundred fifty seven ☐ One hundred fifty eight ☐ One hundred fifty nine ☐ One hundred sixty ☐ One hundred sixty one ☐ One hundred sixty two ☐ One hundred sixty three ☐ One hundred sixty four ☐ One hundred sixty five ☐ One hundred sixty six ☐ One hundred sixty seven ☐ One hundred sixty eight ☐ One hundred sixty nine ☐ One hundred seventy ☐ One hundred seventy one ☐ One hundred seventy two ☐ One hundred seventy three ☐ One hundred seventy four ☐ One hundred seventy five ☐ One hundred seventy six ☐ One hundred seventy seven ☐ One hundred seventy eight ☐ One hundred seventy nine ☐ One hundred eighty ☐ One hundred eighty one ☐ One hundred eighty two ☐ One hundred eighty three ☐ One hundred eighty four ☐ One hundred eighty five ☐ One hundred eighty six ☐ One hundred eighty seven ☐ One hundred eighty eight ☐ One hundred eighty nine ☐ One hundred ninety ☐ One hundred ninety one ☐ One hundred ninety two ☐ One hundred ninety three ☐ One hundred ninety four ☐ One hundred ninety five ☐ One hundred ninety six ☐ One hundred ninety seven ☐ One hundred ninety eight ☐ One hundred ninety nine ☐ Two hundred ☐ Two hundred one ☐ Two hundred two ☐ Two hundred three ☐ Two hundred four ☐ Two hundred five ☐ Two hundred six ☐ Two hundred seven ☐ Two hundred eight ☐ Two hundred nine ☐ Two hundred ten ☐ Two hundred eleven ☐ Two hundred twelve ☐ Two hundred thirteen ☐ Two hundred fourteen ☐ Two hundred fifteen ☐ Two hundred sixteen ☐ Two hundred seventeen ☐ Two hundred eighteen ☐ Two hundred nineteen ☐ Two hundred twenty ☐ Two hundred twenty one ☐ Two hundred twenty two ☐ Two hundred twenty three ☐ Two hundred twenty four ☐ Two hundred twenty five ☐ Two hundred twenty six ☐ Two hundred twenty seven ☐ Two hundred twenty eight ☐ Two hundred twenty nine ☐ Two hundred thirty ☐ Two hundred thirty one ☐ Two hundred thirty two ☐ Two hundred thirty three ☐ Two hundred thirty four ☐ Two hundred thirty five ☐ Two hundred thirty six ☐ Two hundred thirty seven ☐ Two hundred thirty eight ☐ Two hundred thirty nine ☐ Two hundred forty ☐ Two hundred forty one ☐ Two hundred forty two ☐ Two hundred forty three ☐ Two hundred forty four ☐ Two hundred forty five ☐ Two hundred forty six ☐ Two hundred forty seven ☐ Two hundred forty eight ☐ Two hundred forty nine ☐ Two hundred fifty ☐ Two hundred fifty one ☐ Two hundred fifty two ☐ Two hundred fifty three ☐ Two hundred fifty four ☐ Two hundred fifty five ☐ Two hundred fifty six ☐ Two hundred fifty seven ☐ Two hundred fifty eight ☐ Two hundred fifty nine ☐ Two hundred sixty ☐ Two hundred sixty one ☐ Two hundred sixty two ☐ Two hundred sixty three ☐ Two hundred sixty four ☐ Two hundred sixty five ☐ Two hundred sixty six ☐ Two hundred sixty seven ☐ Two hundred sixty eight ☐ Two hundred sixty nine ☐ Two hundred seventy ☐ Two hundred seventy one ☐ Two hundred seventy two ☐ Two hundred seventy three ☐ Two hundred seventy four ☐ Two hundred seventy five ☐ Two hundred seventy six ☐ Two hundred seventy seven ☐ Two hundred seventy eight ☐ Two hundred seventy nine ☐ Two hundred eighty ☐ Two hundred eighty one ☐ Two hundred eighty two ☐ Two hundred eighty three ☐ Two hundred eighty four ☐ Two hundred eighty five ☐ Two hundred eighty six ☐ Two hundred eighty seven ☐ Two hundred eighty eight ☐ Two hundred eighty nine ☐ Two hundred ninety ☐ Two hundred ninety one ☐ Two hundred ninety two ☐ Two hundred ninety three ☐ Two hundred ninety four ☐ Two hundred ninety five ☐ Two hundred ninety six ☐ Two hundred ninety seven ☐ Two hundred ninety eight ☐ Two hundred ninety nine ☐ Three hundred ☐ Three hundred one ☐ Three hundred two ☐ Three hundred three ☐ Three hundred four ☐ Three hundred five ☐ Three hundred six ☐ Three hundred seven ☐ Three hundred eight ☐ Three hundred nine ☐ Three hundred ten ☐ Three hundred eleven ☐ Three hundred twelve ☐ Three hundred thirteen ☐ Three hundred fourteen ☐ Three hundred fifteen ☐ Three hundred sixteen ☐ Three hundred seventeen ☐ Three hundred eighteen ☐ Three hundred nineteen ☐ Three hundred twenty ☐ Three hundred twenty one ☐ Three hundred twenty two ☐ Three hundred twenty three ☐ Three hundred twenty four ☐ Three hundred twenty five ☐ Three hundred twenty six ☐ Three hundred twenty seven ☐ Three hundred twenty eight ☐ Three hundred twenty nine ☐ Three hundred thirty ☐ Three hundred thirty one ☐ Three hundred thirty two ☐ Three hundred thirty three ☐ Three hundred thirty four ☐ Three hundred thirty five ☐ Three hundred thirty six ☐ Three hundred thirty seven ☐ Three hundred thirty eight ☐ Three hundred thirty nine ☐ Three hundred forty ☐ Three hundred forty one ☐ Three hundred forty two ☐ Three hundred forty three ☐ Three hundred forty four ☐ Three hundred forty five ☐ Three hundred forty six ☐ Three hundred forty seven ☐ Three hundred forty eight ☐ Three hundred forty nine ☐ Three hundred fifty ☐ Three hundred fifty one ☐ Three hundred fifty two ☐ Three hundred fifty three ☐ Three hundred fifty four ☐ Three hundred fifty five ☐ Three hundred fifty six ☐ Three hundred fifty seven ☐ Three hundred fifty eight ☐ Three hundred fifty nine ☐ Three hundred sixty ☐ Three hundred sixty one ☐ Three hundred sixty two ☐ Three hundred sixty three ☐ Three hundred sixty four ☐ Three hundred sixty five ☐ Three hundred sixty six ☐ Three hundred sixty seven ☐ Three hundred sixty eight ☐ Three hundred sixty nine ☐ Three hundred seventy ☐ Three hundred seventy one ☐ Three hundred seventy two ☐ Three hundred seventy three ☐ Three hundred seventy four ☐ Three hundred seventy five ☐ Three hundred seventy six ☐ Three hundred seventy seven ☐ Three hundred seventy eight ☐ Three hundred seventy nine ☐ Three hundred eighty ☐ Three hundred eighty one ☐ Three hundred eighty two ☐ Three hundred eighty three ☐ Three hundred eighty four ☐ Three hundred eighty five ☐ Three hundred eighty six ☐ Three hundred eighty seven ☐ Three hundred eighty eight ☐ Three hundred eighty nine ☐ Three hundred ninety ☐ Three hundred ninety one ☐ Three hundred ninety two ☐ Three hundred ninety three ☐ Three hundred ninety four ☐ Three hundred ninety five ☐ Three hundred ninety six ☐ Three hundred ninety seven ☐ Three hundred ninety eight ☐ Three hundred ninety nine ☐ Four hundred ☐ Four hundred one ☐ Four hundred two ☐ Four hundred three ☐ Four hundred four ☐ Four hundred five ☐ Four hundred six ☐ Four hundred seven ☐ Four hundred eight ☐ Four hundred nine ☐ Four hundred ten ☐ Four 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Waste Management of IL, Inc.  
 Special Waste Group  
 5245 W. 38<sup>th</sup> Street  
 Cicero, IL 60804  
 (708) 222-5056, fax (708) 656-0684

### Exhibit A

S	Name: Sheffield Steel Corp		
E	Address: One Industry Avenue		
R			
V	City: Joliet	State: IL	Zip: 60434
I	Contact: Joe Zotto - Sheffield Steel		
C	Phone: (815) 740-4920		
E	Fax: (815) 740-4909		

Waste Name: oil contaminated soil	Profile: PB7641	Facility: Laraway
-----------------------------------	-----------------	-------------------

B	Name: Sheffield Steel		
I	Address: P.O. Box 727		
L			
L	City: Joliet	State: IL	Zip: 60434
I	Contact: Joe Zotto		
N	Phone: (815) 740-4920		
G	Fax: (815) 740-4909		

Description	Rate
Disposal oil contaminated soil	\$ 23.00 / ton

#### Special Conditions of Sale:

<input type="checkbox"/> Taxable <input type="checkbox"/> Tax Exempt

#### Terms of Sale:

- Net 30 days and as secured by any instrument required by Waste Management of Illinois, Inc.
- Late fee of 1 1/2% will be charged after 45 days.
- All loads will be billed at 4 tons minimum.
- If transportation is provided, a demurrage charge of \$65.00 / hour after the first half-hour will be applied, and all loads transported in a dump trailer will be billed at 15 cubic yards, minimum.
- Disposal rates include taxes and fees.

Sheffield Steel

Signature

Printed Name

Waste Management of Illinois, Inc.

Signature

date

Mark D. Payne, Division Sales Manager

Printed Name



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NA		Manifest Document No. 00001		2. Page 1 of 1		Information in the shaded areas is not required by Federal law, but is required by Illinois law.			
3. Generator's Name and Mailing Address SHEPHERD STEEL CORP ONE INDUSTRIAL DRIVE JOLIET, IL 60434		Location If Different									
4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS 630 237 7340											
5. Transporter 1 Company Name SUPERIOR SPECIAL SERVICES		8. US EPA ID Number IWD 988 566 543									
7. Transporter 2 Company Name		8. US EPA ID Number									
9. Designated Facility Name and Site Address CPLS ENVIRONMENTAL 910 SAK DRIVE CPLS HILL IL 60435		10. US EPA ID Number ILO 000474999									
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)				12. Containers No. Type		13. Total Quantity		14. Unit Unit Wt/Vol		15. Waste No.	
a. NON HAZARDOUS, NON E.C.A. REGULATED, WATER AND OIL				004 PM		00220		G			
b.											
c.											
d.											
15. Special Handling Instructions and Additional Information 40C 00112											
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.											
Printed/Typed Name T. Fredette				Signature T. Fredette				Date Month Day Year 05/17/00			
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name WILLIAM BEAL				Signature WILLIAM BEAL				Date Month Day Year 05/17/00			
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature				Date Month Day Year			
19. Discrepancy Indication Space											
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/Typed Name											

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 112, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$5,000 per day of violation. Fabrication of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Federal Emergency Response Center.

COPY 4. TRANSPORTER 1 COPY

In case of a spill call the Illinois Office of Emergency Response at 217 / 782-7860 and the National Response Center at 800 / 424-9802 or 202 / 426-2675.



1. Open burning piles located at the scrap metal processing area.



2. Second view of open burning piles located at the scrap metal processing area.



3. The mill scale pile at the west end of the facility stored prior to sale to cement kilns.





4. Open burning pile occurring at the scrap metal processing area.



5. Two rusty unmarked drums of an unknown waste/material stored north of the oil storage room. Note stained soil.



6. View of the inside of the open topped drum shown in photo 5, exposing a solid material of unknown origin.





7. Close-up view of a faded label on the drum shown in photo 6.

FRUG-200-0  
AMERICAN CHEMICAL  
TECHNOLOGIES, INC.

951 James  
Lowell, MA 01845  
(517) 548-2615

Factory  
Mutual  
System

Approved

8. Eleven drums of used oil located in the oil storage room. None of the containers were marked with the words "used oil."



9. Spills and severe staining on the ground at the oil storage room.





10. Overview of the "refractory brick pile" located on the east side of the facility. The 5 and 1 gallon containers in the foreground were not empty.



11. Overview of the "refractory brick pile" located on the east side of the facility.



12. Overview of the "refractory brick pile" located on the east side of the facility.





13. Containers of waste discarded in the "refractory brick pile" located on the east side of the facility.



14. The east side of the "refractory brick pile". Note discarded containers and other debris within the pile.



15. Spilled/dumped 55-gallon containers of black liquid located south of the "refractory brick pile".





16. Additional view of spilled/dumped 55-gallon containers of black liquid located south of the refractory brick pile.



17. Overview of oil/grease stained area south of the refractory brick waste piles.



18. Mill scale drying beds located at the waste water treatment plant near the Des Plaines River.









16



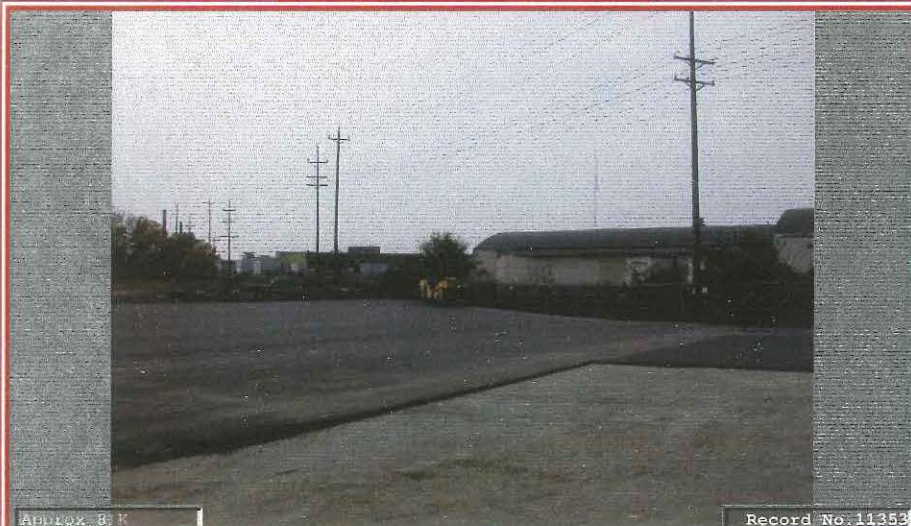
17



18







Approx. 8:10

Record No. 11353

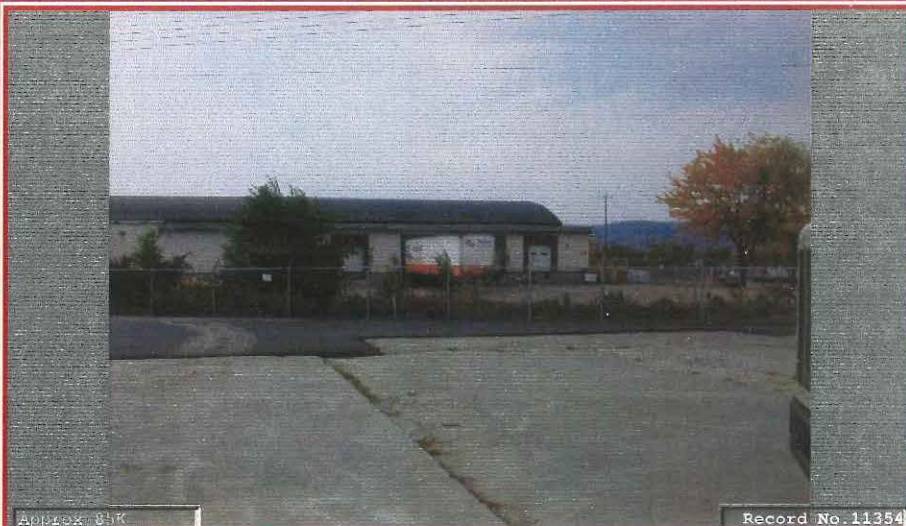
**Completed Asphalt Paving**

Direction: NW

Taken By: MO

File: DSCN0362.JPG

Job Number: 144-001



Approx. 8:10

Record No. 11354

**Completed Asphalt Paving**

Direction: N

Taken By: MO

File: DSCN0363.JPG

Job Number: 144-001



Approx. 9:25

Record No. 11355

**Completed Asphalt Paving**

Direction: NE

Taken By: MO

File: DSCN0364.JPG

Job Number: 144-001



Approx. 9:30

Record No. 11356

**Completed Asphalt Paving**

Direction: W

Taken By: MO

File: DSCN0367.JPG

Job Number: 144-001

**Safety-Kleen Systems, Inc. Service Center  
La Crosse, Wisconsin**

SITE REMEDIATION WORK PLAN  
CLEANING OF CONCRETE PAD  
SHEFFIELD STEEL CORP.  
JOLIET FACILITY  
USEPA ID No.: ILD 151 759 248

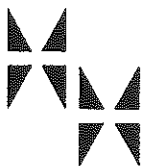
prepared for:

Sheffield Steel Corp.  
Joliet, Illinois

prepared by:

Huff & Huff, Inc.  
James E. Huff, P.E.  
Sarah Monette, P.E.

January 18, 2000



**HUFF & HUFF, INC.**  
ENVIRONMENTAL CONSULTANTS  
LaGRANGE, ILLINOIS

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A	Health and Safety Plan

## LIST OF ACRONYMS

AQAP	Analytical Quality Assurance Plan
IEPA	Illinois Environmental Protection Agency
MS/MSD	matrix spike / matrix spike duplicate
QA/QC	quality assurance / quality control
RCRA	Resource Conservation and Recovery Act
USEPA	United States Environmental Protection Agency



## 1. INTRODUCTION

### 1.1 Remediation Objectives

This work plan addresses a petroleum-stained concrete pad at the Sheffield Steel facility located in Joliet, Illinois. The pad underlies the facility's "oil drum accumulation area," which is used to stage drums of non-hazardous waste grease and oil before off-site disposal. The staining was identified in August 1999, during a site inspection conducted by the United States Environmental Protection Agency (USEPA).

The objective of the proposed site remediation is to remove petroleum residues from the concrete pad. High-pressure steam cleaning will be used to clean the pad. The residues generated from cleaning will be analyzed to determine whether they are hazardous wastes as defined by the Resource Conservation and Recovery Act (RCRA). If the residues are hazardous wastes, then an additional work plan for closure of the concrete pad storage area will be submitted to the USEPA.

### 1.2 Project Organization and Key Personnel

The USEPA requested Sheffield Steel address the concrete pad in correspondence dated December 9, 1999. Sheffield Steel's legal counsel (Collier, Shannon, Rill & Scott) has retained Huff & Huff, Inc. (H&H) to prepare this work plan. Huff & Huff will work with an environmental contractor (to be determined) to perform the cleaning.

Key project personnel are:

Mr. Douglas Strickland	Sheffield Steel Corp.	Mgr. Of Env., Health & Safety
Mr. Frank DiFalco	Sheffield Steel Corp.	Operations Manager
Mr. Ken Morris	Sheffield Steel Corp.	Maint. & Eng. Manager
Mr. John L. Wittenborn	Collier, Shannon, Rill & Scott	Legal Counsel
Mr. Jeffrey Longworth	Collier, Shannon, Rill & Scott	Legal Counsel

Mr. James E. Huff, P.E.  
Ms. Sarah Monette, P.E.

H&H Environmental Consultants  
H&H Environmental Consultants

Principal  
Project Engineer

### 1.3 Project Schedule

The anticipated project schedule is as follows:

Site Remediation Field Work (cleaning of concrete pad)..... March 2000  
Data Review and Assessment.....March/April 2000  
Preparation and Review of Findings Report..... April 2000  
Submission of Findings Report to USEPA..... May 2000  
Submission of Remediation Work Plan to USEPA (if hazardous waste identified) ..... May 2000



## 2. CONCRETE PAD

The "oil drum accumulation area" is an accumulation area for drums containing non-hazardous waste grease and oil-contaminated absorbent "pigs." The accumulation area is used for staging these petroleum waste streams before off-site disposal at Land and Lakes non-hazardous landfill. **Figure 2-1** depicts the area.

The entire accumulation area is underlain with a bermed concrete pad to avoid direct exposure of the drums to the ground. Some grease and oil has stained the concrete pad and adjacent ground surface to the east, as observed during USEPA's August 1999 inspection. The staining is the result of minor leaks and spills during routine drum transfer operations. The stained area of the pad measures approximately 45 feet by 20 feet.

Sheffield Steel will steam clean the concrete pad to remove any petroleum residues and then sample the residues to determine whether they are hazardous wastes (see **Section 3**). *[Note: Sheffield Steel also will test the stained soils for hazardous waste characteristics, as outlined in "Site Investigation Work Plan, Petroleum-Stained Soil Areas," which is provided under separate cover.]*

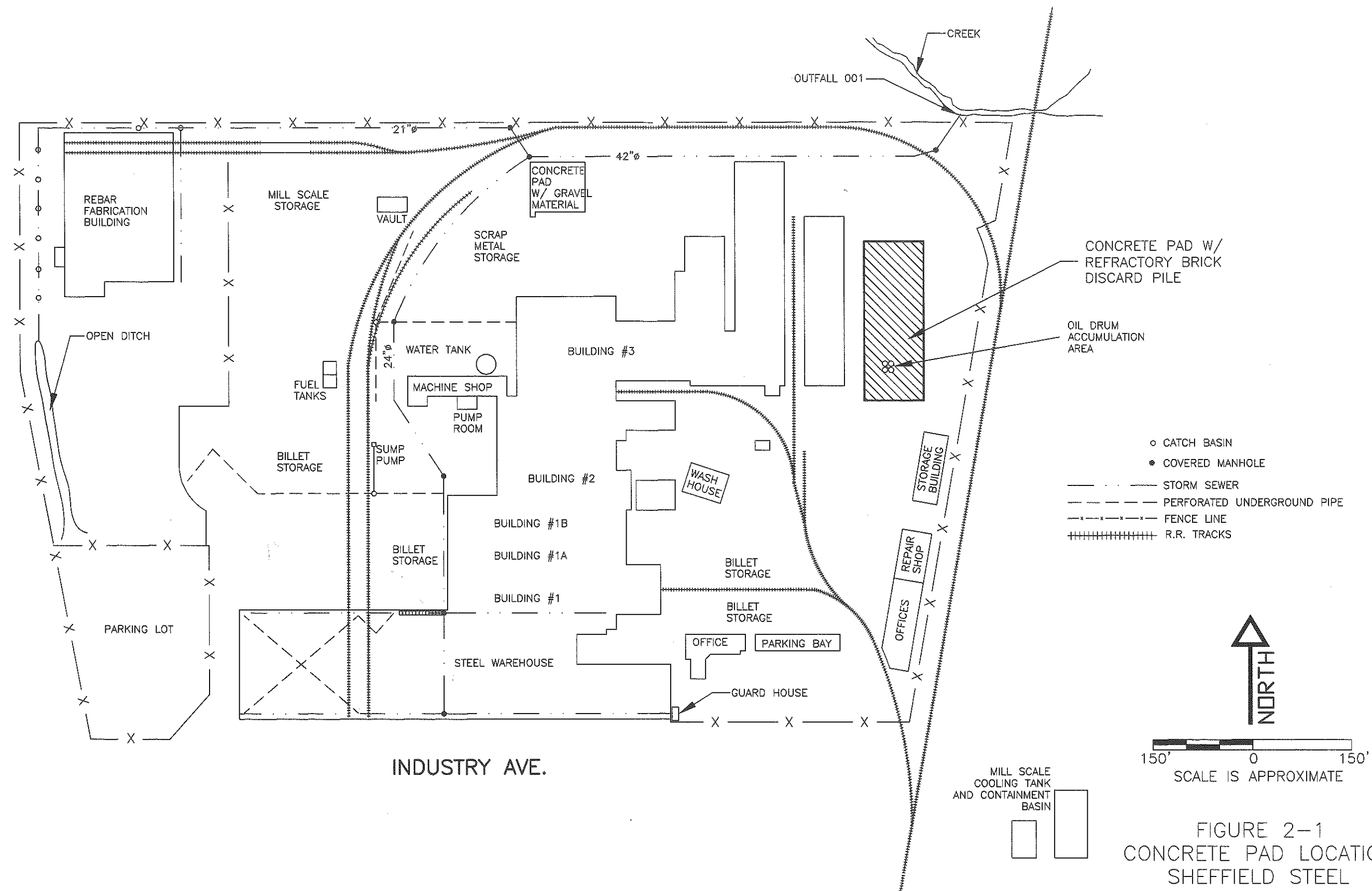


FIGURE 2-1  
CONCRETE PAD LOCATION  
SHEFFIELD STEEL  
JOLIET FACILITY

### 3. REMEDIATION APPROACH AND RATIONALE

#### 3.1 Overview of Approach and Rationale

The cleaning will serve to remove petroleum staining from the concrete pad. The cleaning water and any other residues generated during cleaning will be sampled to determine if they should be managed as RCRA hazardous wastes.

#### 3.2 Cleaning Activities

The concrete pad will be scrubbed with Alconox soap, then wet-vacuumed. When cleaning appears complete based upon visual assessment of the pad, the pad will be steam-cleaned, then wet-vacuumed. The water and other residues generated will be captured by the vacuum and drummed. Each volume of water (cleaning and steam rinse) will be drummed separately for waste characterization. The drums will be disposed of off-site as hazardous or non-hazardous wastes, based upon the waste characterization results.

#### 3.3 Contaminants of Potential Interest

The contaminants of potential interest will be limited to those contaminants that would make the cleaning residues RCRA hazardous wastes. Of the four potential hazardous waste characteristics, the only characteristic of interest is toxicity; the cleaning residues would not reasonably be expected to have the characteristics of reactivity, ignitibility, or corrosivity. This expectation is consistent with the generator's knowledge and the characteristics of the wastes routinely generated at the facility.

In order to determine whether the residues exhibit the RCRA toxicity characteristic, organics and metals will be analyzed. The specific constituents analyzed will be those specified in the RCRA lists for TCLP organics and TCLP metals. The TCLP parameters are listed in **Table 3-1**, along with their RCRA regulatory concentrations.

**TABLE 3-1**  
**TCLP PARAMETERS**

<b>TCLP Organics</b>	<b>RCRA Level, mg/L</b>	<b>TCLP Metals</b>	<b>RCRA Level, mg/L</b>
Benzene	0.5	Arsenic	5.0
Carbon tetrachloride	0.5	Barium	100.0
Chlorobenzene	100.0	Cadmium	1.0
Chloroform	6.0	Chromium	5.0
1,2-Dichloroethane	0.5	Lead	5.0
1,1-Dichloroethylene	0.7	Mercury	0.2
Methyl ethyl ketone	200.0	Selenium	1.0
Tetrachloroethylene	0.7	Silver	5.0
Trichloroethylene	0.5		
Vinyl chloride	0.2		
o-Cresol	200.0 <sup>a/</sup>		
m-Cresol	200.0 <sup>a/</sup>		
p-Cresol	200.0 <sup>a/</sup>		
1,4-Dichlorobenzene	7.5		
2,4-Dinitrotoluene	0.13 <sup>b/</sup>		
Hexachlorobenzene	0.13 <sup>b/</sup>		
Hexachlorobutadiene	0.5		
Hexachloroethane	3.0		
Nitrobenzene	2.0		
Pentachlorophenol	100.0		
Pyridine	5.0 <sup>b/</sup>		
2,4,5-Trichlorophenol	400.0		
2,4,6-Trichlorophenol	2.0		

a/ If o-, m-, and p-cresol concentrations cannot be differentiated, then the total cresol concentration is used. The regulatory level for total cresol is 200 mg/L.

b/ The quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

#### 4. FIELD PROCEDURES

*[Note: Field work safety procedures are described in the site "Health and Safety Plan," which is provided as Appendix A.]*

##### 4.1 Cleaning / Steam Rinse

The concrete pad will be scrubbed with brushes and Alconox soap, followed by rinsing using high-pressure steam equipment operated by an environmental contractor.

A wet vacuum will be used to capture all water and other residues. The captured water will be transferred to drums. The drums will be staged on the concrete pad.

##### 4.2 Sample Collection

Sampling Method. Samples will be collected from the washwater and rinsewater drums using disposable bailers. A new bailer will be used for each sample.

Field Screening. Samples will be visually characterized at the time of collection. The characterization will include visual inspection for the presence of a sheen and contaminant-related materials.

##### 4.3 Sampling Handling and Identification

###### 4.3.1 Sample Preservation

Containers. Samples will be placed in containers provided by the laboratory. The containers will meet the minimum quality requirements set forth in USEPA "OSWER Directive No. 9240.0-05A, Specifications and Guidance for Contaminant-Free Sample Containers."

Additives. The sample containers will be pre-preserved with chemical additives, in accordance with USEPA SW-846 guidance. Containers for organic samples will be preserved with hydrochloric acid. Containers for metals will be preserved with nitric acid.

Temperature Control. All samples will be maintained in coolers with ice. Samples will be placed in the coolers as soon as possible after sample collection.

#### 4.3.2 Sample Labels

Samples will be identified by a sticker-label affixed to the container. The information will be recorded in waterproof ink. Information recorded on the label will include:

- Project name
- Sample location identification
- Sample depth
- Date
- Initials of sampler

#### 4.3.3 Sample Packing and Shipping

The following procedures will be used to assure the integrity of sample containers during shipping:

- Careful packing of sample containers in coolers (e.g., use of packing materials).
- Placement of each sample container in an individual plastic baggie to help assure containment, prevention of cross-contamination, and protection of labels.
- Double-bagging of ice to minimize potential for water damage to labels and/or seepage into containers.

#### 4.3.4 Sample Custody

Chain-of-custody will begin as soon as a sample is collected. Once sample labels are placed on sample containers, the containers will be documented on a chain-of-custody form. The laboratory will provide the forms.

#### 4.4 Equipment Decontamination

The heavy equipment used for steam cleaning will itself be steam cleaned for decontamination. Light equipment will be decontaminated as follows:

1. Tap water and Alconox wash and scrub.
2. Tap water rinse.
3. Distilled water rinse.
4. Methanol rinse.
5. Distilled water rinse.
6. Thorough air drying.

Decontamination will be performed on site, in an area located away from the cleaning and sampling activities. The decontamination water will be captured and added to the water drums.

#### 4.5 Documentation

Field documentation will be sufficient to:

- Permit another professional to understand what tasks were performed.
- Identify the procedures, equipment, and materials used in sufficient detail to allow reproducibility of results.
- Identify other evidence, as appropriate, that supports the findings.

Each document will include the following information, at a minimum:

- Project identifier.
- Date and time (as appropriate).

- Location / work area.
- Names of personnel involved.
- Activities performed.
- Equipment used.
- Observations regarding potential contamination.



## 5. LABORATORY ANALYSIS

### 5.1 Data Quality Goals

The analytical data quality goals will be as set forth in the Illinois Environmental Protection Agency (IEPA) "Analytical Quality Assurance Plan" (AQAP) for the Bureau of Land Site Remediation Program. "Level IIIB" data quality requirements will be met. (See **Section 6** for discussion of quality assurance / quality control procedures.)

### 5.2 Analytical Methods and Detection Limits

Parameters to be analyzed are organics and metals, per methods USEPA SW-846 guidance. The detection limits will be no greater than the RCRA regulatory levels, as identified in **Table 3-1**.

## 6. QUALITY ASSURANCE PROJECT PLAN

Project quality assurance / quality control (QA/QC) will be as set forth in the Illinois Environmental Protection Agency (IEPA) "Analytical Quality Assurance Plan" (AQAP) for the Bureau of Land Site Remediation Program. "Level IIIB" data quality requirements will be met.

Field QA/QC. Field QA/QC will include the collection and/or designation of field blanks, trip blanks, and matrix spike/matrix spike duplicate (MS/MSD) samples.

- The Alconox soap solution and the steam clean rinse water both will be analyzed for TCLP organics (volatiles only) before use. These two samples will serve as the field blank.
- One trip blank will be included with the sample container shipment. The trip blank will be analyzed for TCLP organics (volatile only).
- One MS/MSD sample will be specified.

No field duplicate will be collected because only a few samples total will be collected.

Laboratory QA/QC. Laboratory QA/QC will be managed by the laboratory. The selected laboratory will be Test America in Bartlett, Illinois. The laboratory will be notified that "Level IIIB" data quality requirements are necessary. QA/QC will include matrix spike/matrix spike duplicate (MS/MSD) samples, which the laboratory will select.

## APPENDIX A

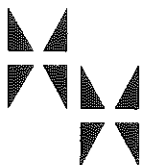
# **HEALTH and SAFETY PLAN**

## **Sheffield Steel**

### **Joliet Facility**

Prepared by:  
**James E. Huff, P.E.**  
**Sarah Monette, P.E.**

**January 18, 2000**



***HUFF & HUFF, INC.***  
**ENVIRONMENTAL CONSULTANTS**  
**LaGRANGE, ILLINOIS**

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### LIST OF ATTACHMENTS

OSHA Training Certificates  
Chemical Information  
Signature Sheet

## ACRONYMS

BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
CFR	Code of Federal Regulations
IDLH	Immediate Danger to Life and Health
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PAH	Polynuclear Aromatic Hydrocarbons
PPE	Personal Protective Equipment
ppm	parts per million
STEL	Short Term Exposure Limit
TCLP	Toxicity Characteristic Leaching Procedure
TWA	Time Weighted Average
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

## 1. INTRODUCTION

The purpose of this Health and Safety Plan is to define health and safety protocols to be followed during investigation/remediation activities at the Sheffield Steel facility located in Joliet, Illinois.

The work will be performed in areas suspected of containing petroleum residues. The work activities will include removing stained soils, cleaning a concrete pad, and collecting soil and water samples.

The work procedures will be as set forth in the two work plans prepared for this site by Huff & Huff, both dated January 2000: "Site Investigation Work Plan, Stained Soil Areas," and "Site Remediation Work Plan, Cleaning of Concrete Pad."

The health and safety protocols established in this plan are based upon the site conditions and chemical hazards known to be present and/or anticipated to be present from the available site data. This plan is intended solely for use during the proposed activities. Specifications herein are subject to review and revisions based upon actual conditions encountered in the field. Before site activities begin, all personnel involved in these activities will have read and understood this plan and all revisions made thereto.

The information presented in this Health and Safety Plan includes:

- The site description
- Personnel responsibilities
- Potential physical and chemical hazards
- Medical surveillance
- Work zones
- Decontamination procedures
- Emergency response
- Site security



## **2. SITE DESCRIPTION**

### **2.1 Site Location and Layout**

The site address is:

Sheffield Steel  
Industry Avenue  
Joliet, Illinois

Figure 2-1 depicts the site location and Figure 2-2 depicts the site layout, including proposed work areas. The site is located in an area of industrial properties.

### **2.2 Proposed Work**

Surface staining has been identified in three soil areas and on a concrete pad. The soils will be removed from the ground and placed into drums, and the concrete pad will be scrubbed and steam-cleaned, with the cleaning waters wet-vacuumed into drums. Samples will be taken from the soil and water drums. The samples will be analyzed for hazardous waste characteristics: TCLP organics and TCLP metals.

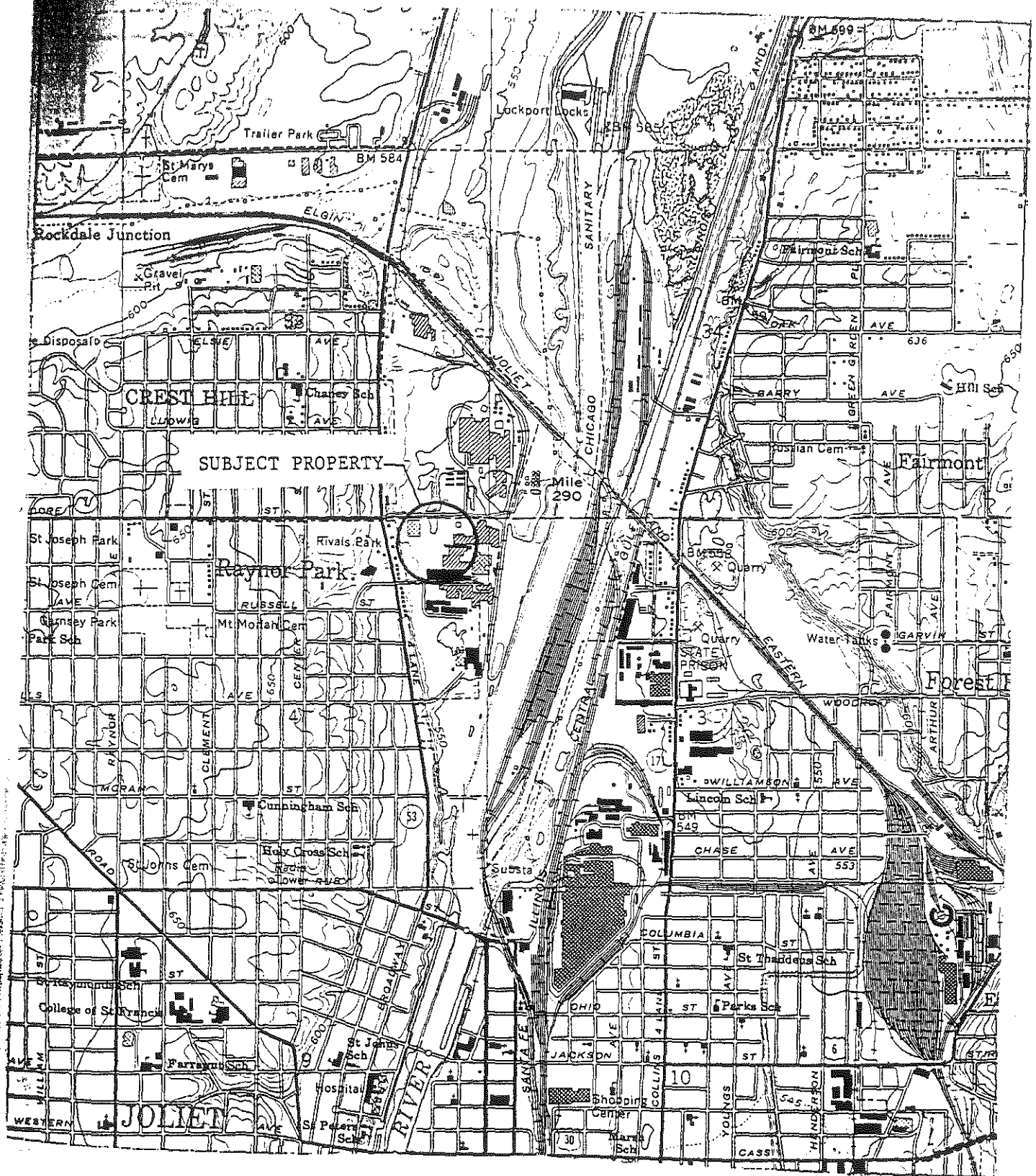


FIGURE 2-1  
SITE LOCATION MAP  
SHEFFIELD STEEL

SCALE: 1" = 2000'

SOURCE: UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY  
JOLIET QUADRANGLE

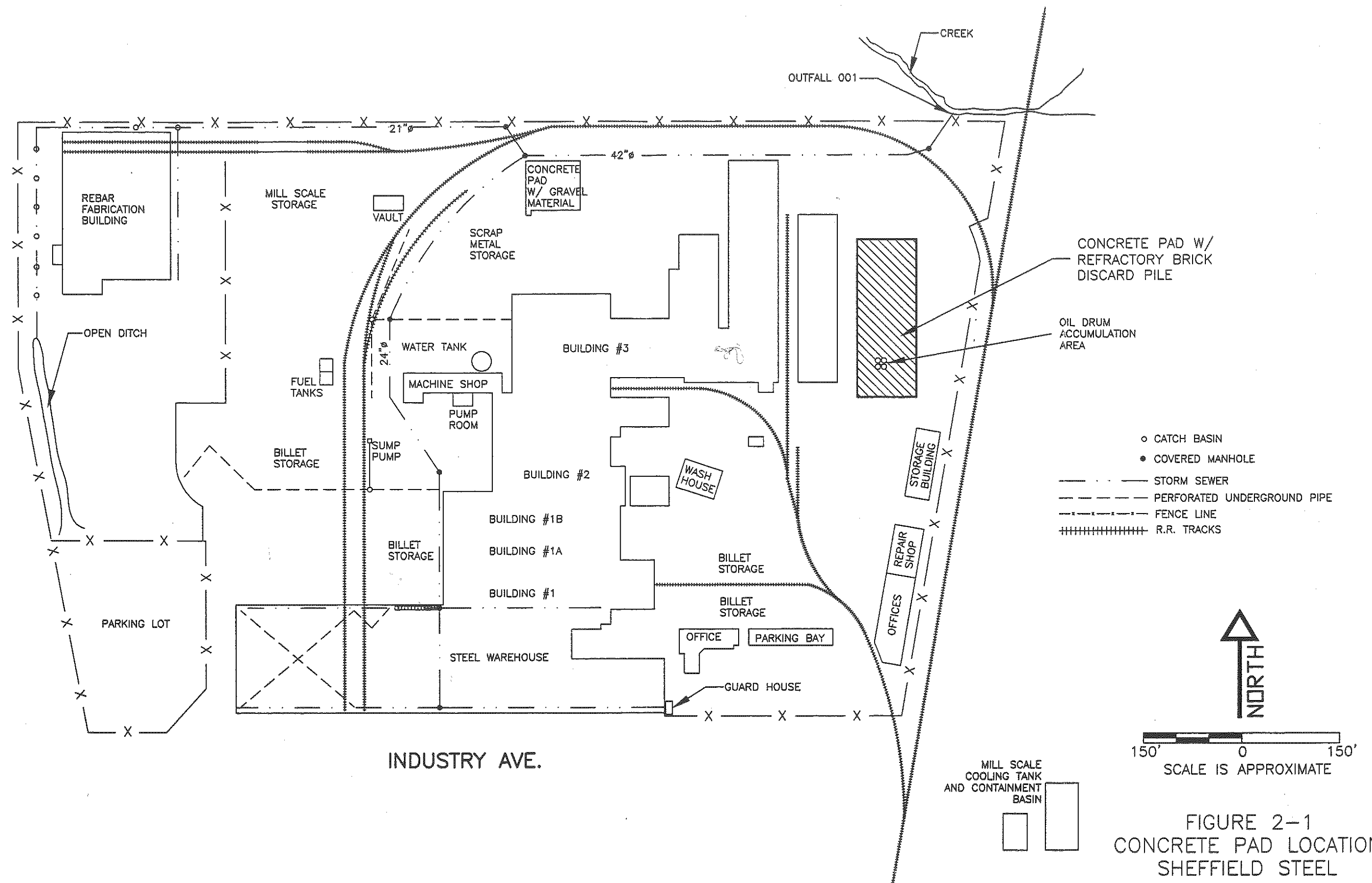


FIGURE 2-1  
CONCRETE PAD LOCATION  
SHEFFIELD STEEL  
JOLIET FACILITY

SITE REMEDIATION WORK PLAN  
CLEANING OF CONCRETE PAD  
SHEFFIELD STEEL CORP.  
JOLIET FACILITY  
USEPA ID No.: ILD 151 759 248

prepared for:

Sheffield Steel Corp.  
Joliet, Illinois

prepared by:

Huff & Huff, Inc.  
James E. Huff, P.E.  
Sarah Monette, P.E.

January 18, 2000  
Revised April 10, 2000

SITE INVESTIGATION WORK PLAN  
STAINED SOIL AREAS  
SHEFFIELD STEEL CORP.  
JOLIET FACILITY  
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## 2.1 Oil Drum Accumulation Area

The "oil drum accumulation area" is an accumulation area for drums containing non-hazardous waste grease and oil-contaminated absorbent "pigs." The accumulation area is used for staging the drums before off-site disposal at Land and Lakes non-hazardous landfill. Figure 2-1 depicts the area.

The entire accumulation area is underlain with a bermed concrete pad to avoid direct exposure of the drums to the ground. Some grease and oil has stained the concrete pad and the adjacent ground surface to the east, as observed during USEPA's August 1999 inspection. The staining is the result of minor leaks and spills during routine drum transfer operations. Approximately 60 square feet of soil are affected; the staining appears to be limited to the ground surface.

Sheffield Steel will excavate the stained soils and place them into drums. Prior to excavation, the stained soils will be sampled to determine whether they are RCRA hazardous wastes (see Section 3). [Note: Sheffield Steel also will steam clean the concrete pad, as outlined in "Site Remediation Work Plan, Cleaning of Concrete Pad," which is provided under separate cover.]

In addition, Sheffield Steel will confirm removal of all stained soils by screening the underlying soils for the presence of petroleum residuals. The screening will include visual assessment, olfactory assessment, and screening with a photo-ionization detector (PID).

The PID will be used to screen the samples for the presence of VOCs using a closed-cup protocol. A sample of the underlying soil will be placed in a one-pint plastic cup, approximately half-full. A lid will be placed on the cup and the cup will be set aside for approximately 15 minutes in a warmed area to allow the concentration of volatiles in the headspace to come into equilibrium with the concentration of volatiles in the soil. The lid will be slit with a razor knife and the PID probe will be inserted into the headspace. PID responses will be provided in parts per million (ppm) readings. The PID meter has a detection range from 1 ppm to 2,000 ppm, and is calibrated to read in equivalent ppm of benzene. This headspace method allows detection of

volatiles at relatively low detection levels, and the method is reproducible.

Excavation of the soils will continue until these screening procedures confirm that all impacted soils have been removed. Upon completion, the excavation will be backfilled with clean gravel.

## 2.2 Oil Room / Gear Box

An out-of-use gear box is located on the ground outside of the "oil room." Oils remaining in the gear box overflowed during storm events in 1999. The overflows stained the ground surface, as observed during USEPA's August 1999 inspection. Approximately 45 square feet of soil are affected; the staining appears to be limited to the ground surface. Figure 2-1 depicts the area of staining.

Sheffield Steel will excavate the stained soils and place them into drums. Prior to excavation, the stained soils will be sampled to determine whether they are RCRA hazardous wastes (see Section 3).

In addition, Sheffield Steel will confirm removal of all stained soils by screening the underlying soils for the presence of petroleum residuals. The screening will include visual assessment, olfactory assessment, and screening with a photo-ionization detector (PID), as described in Section 2.1.

Excavation of the soils will continue until these screening procedures confirm that all impacted soils have been removed. Upon completion, the excavation will be backfilled with clean gravel.

## 2.3 Mill Scale Cooling Tank

The "mill scale cooling tank" is used as a settling tank to remove mill scale and oil from waters used at the facility. The mill scale settles to the bottom the tank, then is scooped out, collected into drums, and disposed of off-site. The oils are skimmed from the top of the tank, collected into drums, and disposed of off-site. Figure 2-1 depicts the mill scale tank area.



The adjacent ground surface directly to the south of the tank is stained with a material that appears to be oil, as observed during USEPA's August 1999 inspection. Approximately 100 square feet of soil are affected; the staining appears to be limited to the ground surface.

Sheffield Steel will excavate the stained soils and place them into drums. Prior to excavation, the stained soils will be sampled to determine whether they are RCRA hazardous wastes (see Section 3).

In addition, Sheffield Steel will confirm removal of all stained soils by screening the underlying soils for the presence of petroleum residuals. The screening will include visual assessment, olfactory assessment, and screening with a photo-ionization detector (PID), as described in Section 2.1.

Excavation of the soils will continue until these screening procedures confirm that all impacted soils have been removed. Upon completion, the excavation will be backfilled with clean gravel.

SITE REMEDIATION WORK PLAN  
CLEANING OF CONCRETE PAD  
SHEFFIELD STEEL CORP.  
JOLIET FACILITY  
USEPA ID No.: ILD 151 759 248

prepared for:

Sheffield Steel Corp.  
Joliet, Illinois

prepared by:

Huff & Huff, Inc.  
James E. Huff, P.E.  
Sarah Monette, P.E.

January 18, 2000  
Revised April 10, 2000

### 3.2 Cleaning Activities

The concrete pad will be scrubbed with Alconox soap, then wet-vacuumed. When cleaning appears complete based upon visual assessment of the pad, the pad will be steam-cleaned, then wet-vacuumed. The water and other residues generated will be captured by the vacuum and drummed. Before work begins, absorbent pigs will be placed around the edges of the pad to absorb waters not captured by the vacuum. The pigs also will be drummed when cleaning is complete.

Each volume of water (cleaning and steam rinse) will be drummed separately for waste characterization. The drums will be disposed of off-site as hazardous or non-hazardous wastes, based upon the waste characterization results.

### 3.3 Soil Sample Locations

Soil samples will be collected from three areas:

- The oil drum accumulation area.
- The oil room / gear box area.
- The mill scale cooling tank area.

For each area, two samples will be collected for analysis: one composite sample and one grab sample.

Composite samples will be collected for analysis of metals and semi-volatile organics. The use of composite samples will help assure representative sampling of the stained areas. Each stained area will be divided into four quadrants. A sample of the stained soils will be collected from the center of each quadrant. The four quadrant samples will then be composited into one sample, which will be analyzed for TCLP metals and TCLP semi-volatile organics.

Composite samples cannot be collected for analysis of volatile organics because the handling could release the volatile constituents. Instead, grab samples will be collected. For each stained area, soil will be collected from the center of each quadrant and field-screened with the PID (as described in Section 2.1). A grab sample then will be collected from the quadrant with the highest PID reading and will be analyzed for TCLP volatile organics.

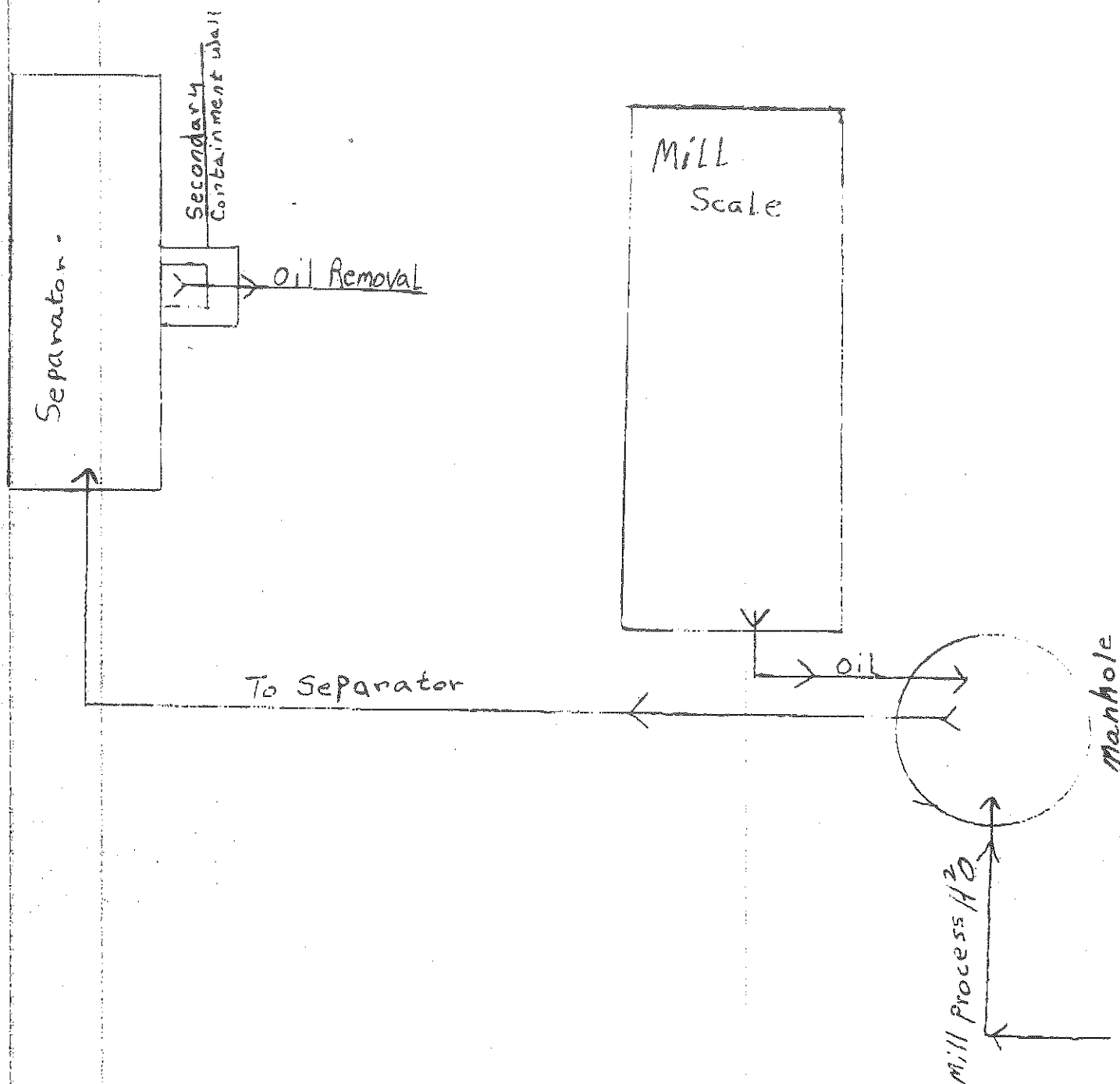
#### 4.1 Sample Collection

Sampling Method. Soil samples will be collected using a trowel. The samples will be collected from the depth of soil staining, which is expected to be greatest within one foot of the surface.

Composite samples and grab samples will be collected (see Section 3.3). For the composite samples, each of the four quadrant samples will be placed into a stainless steel bowl and mixed with the trowel, then the mixed sample will be placed into the sample container. The mixing will help to assure a homogeneous composite sample. Grab samples will be placed directly into the sample container.

Field Screening. Samples will be visually characterized at the time of collection. The characterization will include visual inspection for soil type and color, water content, and contaminant-related materials. Grab samples collected for volatile organic analysis also will be field screened with a PID (see Section 3.3).

River



Joliet Water Flow

18

### **3. PERSONNEL RESPONSIBILITIES**

#### **3.1 Personnel Responsibility Overview**

All on-site personnel shall be trained in health and safety issues and will be responsible for adhering to the procedures in this Health and Safety Plan. The Huff & Huff Site Health and Safety Manager will have ultimate responsibility for the procedures. Should the Site Health and Safety Manager become incapacitated or absent in any way, the contractor shall be in charge, and shall stop work until the Site Health and Safety Manager is available.

#### **3.2 Personnel Training**

All operational personnel shall have participated in routine health and safety education and training programs. These training programs shall have been designed to comply with USEPA and OSHA 29 CFR 1910.120(e) requirements: 40 hours of initial instruction, 8 hours of refresher training, and an additional 8 hours of specialized training for supervisors. At a minimum, the training shall have included the following:

- General Safety Rules
- First Aid/CPR
- Emergency Response Procedures
- Fire Prevention/Protection
- Electrical Hazards
- Basics of Chemistry
- Basics of Toxicology/Physiology
- Hazardous Materials (Types/Characteristics)
- Hazard Communication Information
- Respiratory Protection
- Respirator Training
- Chemical Protective Clothing
- Decontamination Procedures/Personal Hygiene
- Confined Space Work/Safety
- Atmospheric Testing/Sampling Procedures
- Federal and State Regulations

Current training certificates for Huff & Huff personnel are included in the attachments to this plan.

### 3.3 Site Health and Safety Manager

The Huff & Huff Site Health and Safety Manager will be responsible for the health and safety of personnel on-site, including the contractors. The Manager's specific responsibilities will be:

1. To require that all personnel entering the site read this Health and Safety Plan and acknowledge in writing that they understand the contents of the plan. The sign-off form is provided in the attachments.
2. To assure that the Health and Safety Plan is adhered with.
3. To decide when to change levels of personal protective equipment, and, if necessary, to shut down operations.

Failure to follow guidelines of the Site Health and Safety Manager can be cause for suspension of a worker from the site.



#### 4. PHYSICAL AND CHEMICAL HAZARDS

##### 4.1 Physical Hazards

The potential physical hazards for this site include heavy objects/moving machinery and fire/explosion.

*heavy objects / moving machinery*

Site activities will include operations involving steam-cleaning equipment and wet-vacuuming equipment.

*fire / explosion*

The fuels used for the cleaning equipment might present the potential for fire/explosion when exposed to a heat source and source of ignition.

*Note:* Potential physical hazards are anticipated from cleaning activities only, not from soil removal and sampling activities. The soil staining appears to be limited to the ground surface (top one foot). Therefore, no heavy equipment will be used to transfer the soils into drums, and no underground utilities will be encountered. The soil and water samples will be collected from the drums manually, using trowels and disposable bailers.

The following steps will be taken to avoid potential injury associated with the physical hazards:

1. Modified Level D PPE (Level C minus respirator: steel toes boots, hard hat, latex gloves, and safety glasses) will be worn for all field activities. (Respirators might also be required under certain conditions; see Section 4.2.) No one except the cleaning crew should be within 25 feet of the cleaning machinery while it is in operation. Due caution should be exercised by all personnel on site.
2. During operations, personnel shall act as safety backup to each other and shall provide emergency assistance.
3. Personnel will review standard communications for operating and emergency conditions.
4. NO SMOKING will be permitted anywhere within 25 feet of sampling activities.
5. All electrical equipment (power tools, extension cords, instruments, radios, etc.) shall be in conformance with OSHA 29 CFR 1926.400 Subpart K.

## 4.2 Chemical Hazards

The potential chemical hazards at the site are related to exposure to the chemical contaminants in the soil and water. The primary contaminants anticipated to be present at the site are petroleum constituents: BTEX and PAHs. Potential routes of exposure are dermal adsorption, ingestion, and inhalation.

The following steps will be taken to avoid potential injury associated with chemical hazards:

1. Modified Level D PPE (Level C minus respirator: steel toed boots, hard hat, gloves, and safety glasses) will be worn for all field activities. Upgrade to Level C (respirator) might be required based upon site atmospheric conditions (see Item 8 below).
2. Work areas for various operational activities will be established. Entrance and exit locations will be designated and emergency escape routes delineated. (Work zones are discussed in Section 6.)
3. Personnel should wash their hands and face before leaving the site.
4. Eating, drinking, chewing gum or tobacco, smoking, or any other practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any work area.
5. Medicine and alcohol can increase the effects from exposure to toxic chemicals. Prescribed drugs should not be taken by personnel where the potential for adsorption, inhalation, or ingestion of toxic substances exists, unless specifically approved by a qualified physician. Alcoholic beverage intake must be avoided.
6. Contact with contaminated or suspected contaminated surfaces should be avoided. Personnel should avoid walking through puddles, leachate, and discolored surfaces whenever possible. Personnel should not kneel on the ground, lean, sit, or place equipment on drums, containers, or contaminated areas of the ground.
7. Contact lenses should not be worn when the hazard of a splash exists.
8. Site atmospheric conditions will be monitored during any subsurface activities. Benzene concentrations and dust will be used as indicator parameters for determining the level of respiratory/ingestion protection. These parameters will be monitored in two ways: (a) PID meter and (b) visual observation.
  - 8a. PID Meter. On a toxicological basis, benzene is the petroleum constituent of greatest concern. The MSDS for benzene is included in the attachments to this plan. The TWA is 1 ppm (15 min) and the STEL is 5 ppm (15 min). A 10.2 eV PID or a 10.6 eV PID

will be calibrated to read the VOC concentration in a sample or in the atmosphere as benzene. If the average PIDs level is greater than 1 ppm above background in the breathing zone, then the level of respiratory protection will be upgraded from Level D (none) to Level C (air-purifying respirators with combination dust/organic vapor removal cartridges). PIDs will be used a minimum of once at every location to monitor the breathing zone.

- 8b. Visual Observation. If airborne dust is observed, then the level of respiratory/ingestion protection will be upgraded from Level D (none) to Level C (air purifying respirators with combination dust/organic vapor removal cartridges.)

In the case that upgrade to Level C PPE is required, all personnel shall have air-purifying respirators available with combination dust/organic vapor cartridges. The following protocol apply to the use of respirators:

- Respirators shall be clean and disinfected after each day's use, or more often if necessary.
- Before donning, respirators will be inspected for worn or deteriorated parts.
- Personnel must use the buddy system when wearing respiratory protection equipment.
- No facial hair, which interferes with a satisfactory fit of the mask-to-face-seal, is allowed.
- Contact lenses shall not be worn when respirator protection is required.

## **5. MEDICAL FITNESS / PPE**

### **5.1 Medical Fitness**

Huff & Huff personnel participate in a medical program that includes a physical examination once every two years. The program adheres to the requirements of 29 CFR 1910.120(f). The physical examination includes blood, urinalysis, cardio-pulmonary, hearing, and vision tests, as well as a respiratory examination to determine physical fitness to wear respiratory equipment. Personnel are mailed a copy of the record following the examination and have been made aware that the medical records are accessible.

Contractors' medical programs must be similar to Huff & Huff's medical program.

### **5.2 Personal Protective Equipment**

PPE is a very important consideration in any site investigation that involves or may involve hazardous working conditions. As stated in Section 4.2, given the preliminary information concerning the site, modified Level D protection (Level C minus respirator) will be implemented. Respirators with combination dust/organic vapor cartridges will be required whenever the average breathing zone PID reading is 1 ppm or more above background levels.

The Site Health and Safety Manager will decide on appropriate PPE to be worn and he/she will have the discretionary power to upgrade personal protection as appropriate. For example, under muddy conditions, the Site Health and Safety Manager may require disposable boot covers and Tyvek coveralls to be worn. Failure to wear PPE required by the Site Health and Safety Manager can be cause for suspension of a worker from the site.

The following PPE will be available to all on-site personnel:

- hard hat
- safety boots (steel toe)
- gloves (inner and outer)
- clean work clothes (company issued and cleaned)
- full-face or partial-face respirators with combination dust/organic vapor cartridges
- disposable boot covers
- protective (Tyvek) coveralls

## **6. WORK ZONES**

The Site Health and Safety Manager will establish work zones in the event that levels monitored during the work procedures exceed the breathing zone action levels as defined in Section 4.2. The work zones will include an "exclusion zone" in the area where the hazard is present, a "transition zone" where decontamination will take place, and a "support zone" which will be in an area free of hazard. Only protected personnel will be allowed in the hot zone and transition zone; all other personnel will remain in the support zone.

## **7. DECONTAMINATION PROCEDURES**

*(Note: Special decontamination procedures to be implemented during medical emergencies are discussed in Section 8, Emergency Response.)*

### **7.1 Personal Protective Equipment Decontamination**

Decontamination of PPE will be performed on site in an area designated as a "transition zone."

Decontamination will be performed in the following steps:

1. Remove boots and clean, removing any soil or debris.
2. Remove hard hat and clean, removing soil and debris.
3. Remove outer gloves, garments, and tape and place in plastic garbage bag for proper disposal.
4. Remove work clothes and send to commercial/industrial laundry service.
5. Remove inner gloves and place in plastic garbage bag for proper disposal.
6. Remove respirator cartridges and place in plastic garbage bag for proper disposal.
7. Remove respirator and place in bag for proper cleaning and storing.
8. The face and hands should be washed thoroughly as soon as possible after the PPE is removed.

### **7.2 Sampling Equipment Decontamination**

Decontamination of sampling equipment will be performed on site in an area designated as a "transition zone." Decontamination will be performed in the following steps:

1. Tap water and Alconox wash and scrub.
2. Tap water rinse.
3. Distilled water rinse.
4. Methanol rinse.
5. Distilled water rinse.
6. Thorough air drying.

### **7.3 Heavy Equipment Decontamination**

The only heavy equipment used on site will be the steam-cleaning/wet-vacuuming equipment. Based upon its use as cleaning equipment, its decontamination will be performed as part of the cleaning process.

## 8. EMERGENCY RESPONSE

### 8.1 Emergency Contacts

The following phone numbers may be of assistance during a site emergency.

Ambulance	911
Joliet Fire Department	911
Joliet Police Department	911
St. Joseph Medical Center	911
Huff & Huff, Inc.	(708) 579-5940

### 8.2 Hospital Location

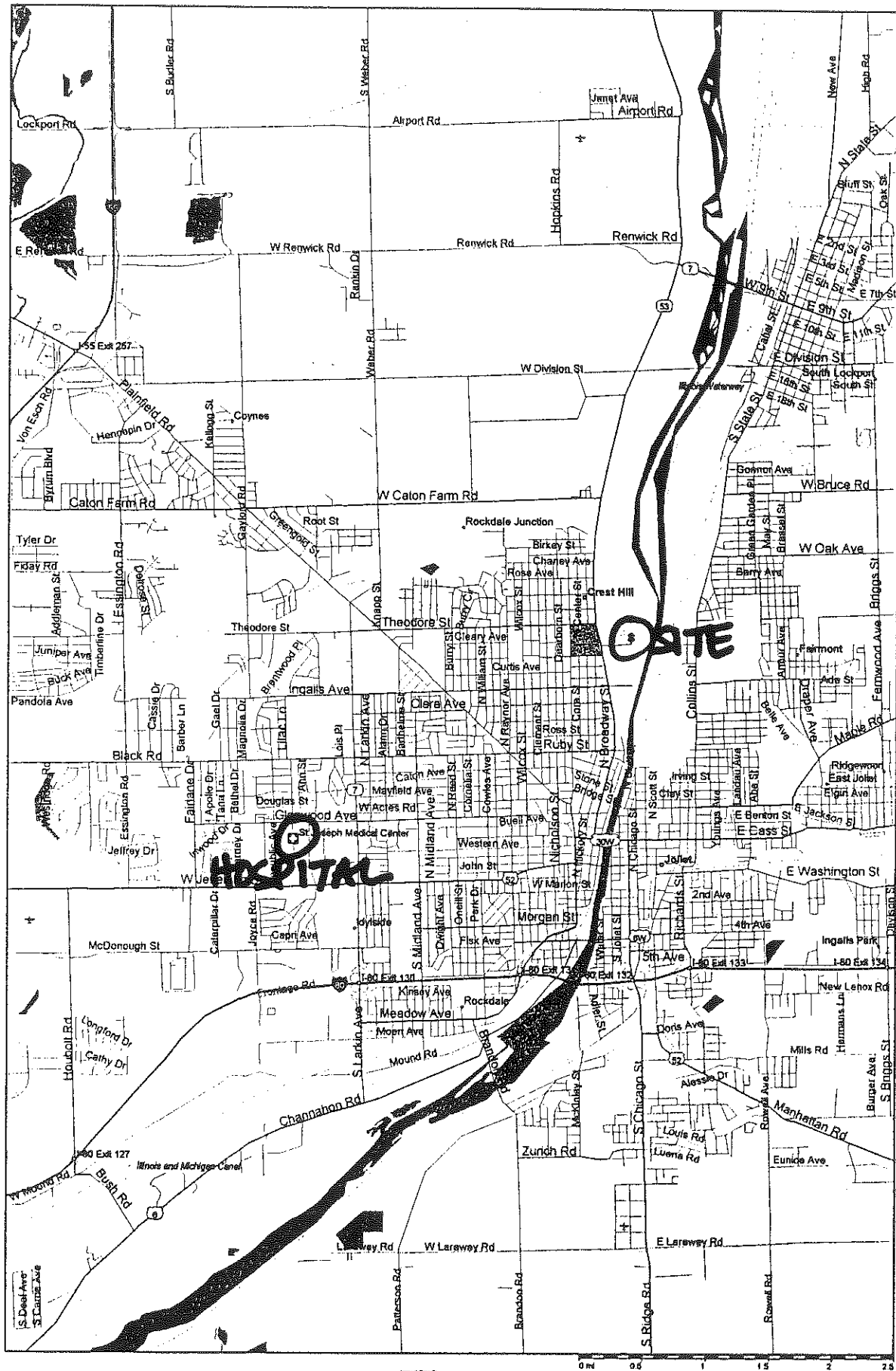
In the event it becomes necessary to transport a victim to the hospital, a map with directions to the St. Joseph Medical Center is provided as Figure 8-1.

The directions to the hospital are as follows:

Exit the property onto Industry Ave. heading right (west).  
Turn right (north) onto Route 53 (Broadway St.).  
Follow Route 53 (Broadway St.) to Route 7 (Theodore St.).  
Turn left (west) onto Route 7 (Theodore St.).  
Follow Route 7 to where it turns south (Larkin Ave.).  
Turn left (south) onto Route 7 (Larkin Ave.).  
Follow Route 7 (Larkin Ave.) to Glenwood Ave.  
Turn right (west) onto Glenwood Ave.  
The St. Joseph Medical Center is located on south (left) side of Glenwood Ave.



FIGURE 8-1  
HOSPITAL LOCATION MAP



Streets98

### 8.3 Medical Records Access

Personal medical records for Huff & Huff personnel may be obtained from:

Occupational Health Services  
Executive Clinic  
222 East Ogden Avenue  
Hinsdale, IL 60521  
Phone: (630) 887-6133  
Emergency Phone: (630) 887-6133

### 8.4 Emergency Care

At least one first aid kit will be available on-site for minor medical care. For major medical care, emergency medical care procedures must be implemented. Heat related emergencies and chemical exposure emergencies are two of the more common major medical problems encountered during environmental investigation activities. The requirements of the first aid kit and the symptoms of the heat and chemical related emergencies are provided below, along with emergency care procedures. The procedures discussed are only guidelines: actual training in emergency medical care or basic first aid is recommended.

#### 8.4.1 First Aid Kit

First aid kits that meet the requirements of 29 CFR 1926.50 will be accessible to all personnel associated with this project. The first aid kits will consist of waterproof containers with individual sealed packages for each care item. The contents will be checked before being brought to the job site.

#### 8.4.2 Heat Related Emergencies

Heat exposure becomes dangerous when the body can no longer regulate its core temperature. Heat related illnesses include heat rash, heat cramps, heat exhaustion, and heat stroke. These illnesses may occur in sequence, beginning with heat rash and progressing into a more severe illness, such

as heat stroke. Alternatively, heat stroke may occur with no precursor. It is important always to remember that heat stroke can cause irreversible damage or death if not treated promptly.

**Heat Rash** affects the skin and feels like prickly heat.

Signs and Symptoms:

1. Skin Rash
2. Tingling or prickling sensation on the skin.

Emergency Care:

1. Shower
2. Dry Skin Thoroughly
3. Change undergarments as needed
4. Stay in a cool place
5. Avoid repeated heat exposure.

**Heat Cramps** are muscle pains, usually in lower extremities, the abdomen, or both.

Signs and Symptoms:

1. Cramps in lower extremities or abdomen. The cramps occur suddenly and commonly are incapacitating and cause intense pain, though some cramps can be mild.
2. Increased respiratory rate.
3. Increased pulse rate.
4. Pale and moist skin.
5. Normal body temperature.
6. Loss of consciousness.
7. Generalized weakness.

Emergency Care:

1. Remove outer, protective garments to allow the victim to cool down. Move the victim to a cool environment; lay victim down if feels faint.
- 2a. If the person is not nauseated, give 1 or 2 glasses of water or an electrolyte solution. Have the person drink slowly. The use of salt tablets is not recommended, as they may precipitate nausea.
- 2b. If the person is nauseated, avoid giving anything by mouth until the nausea subsides.
3. Avoid massaging the cramping muscles. This rarely helps and may actually aggravate the pain.
4. Sponge the person with cool water. If you fan the person, avoid chilling: when the body chills, the muscles generate energy; when the body shivers, this energy is released in the form of heat and actually can increase the body temperature.
5. As salt and water levels are replenished, the pain will subside. A return to work is NOT recommended for a period of at least 12 hours. Further exertion may lead to heat exhaustion or heat stroke.

**Heat Exhaustion** is a more severe response to loss of salt and water.

#### Signs and Symptoms:

1. Heat exhaustion may come on suddenly and cause collapse, or may be present with a headache, fatigue, dizziness, and nausea with occasional abdominal cramping.
2. Profuse sweating.
3. Rapid and weak pulse rate.
4. Rapid and shallow respiration rate.
5. Pale and clammy skin.
6. Normal or decreased body temperature.
7. Irritability and restlessness.

#### Emergency Care:

1. Move the person to a cool environment, take off as much clothing as possible, place in a supine position with legs elevated.
2. Sponge the person with cool water. If you fan the person, avoid chilling: when the body chills, the muscles generate energy; when the body shivers, this energy is released in the form of heat and actually can increase the body temperature.
3. Monitor the person's level of consciousness and airway.
4. If the victim does not feel better, at this point, consider this a medical emergency and seek prompt intervention by emergency medical services.

**Heat Stroke** is caused by a severe disturbance in the body's heat-regulating mechanism and is a profound emergency, with a mortality rate ranging from 25 to 50 percent. It is most common in men over 40, especially in alcoholics. It can also occur in people of any age having too much exposure to the sun or prolonged confinement in a hot atmosphere. Heat stroke comes on suddenly. As the sweating mechanism fails, the body temperature begins to rise precipitously, reaching 106°F (41°C) or higher within 10 to 15 minutes. If the situation is not corrected rapidly, the body cells, especially the cells of the brain, are literally cooked, and irreversible central nervous system damage occurs.

#### Signs and Symptoms:

1. Strong and bounding pulse rate.
2. Hot, dry and flushed skin.
3. Potential headache, dizziness, and dryness of mouth.
4. Seizures and coma.
5. Potential loss of consciousness and airway maintenance problems.

#### Emergency Care:

1. Speed is essential: delay may result in permanent brain damage.
2. Establish an open airway.
3. Move the person to a cool environment. Take off as much clothing as possible, place in a semi-reclining position with the head elevated.
4. Use any means possible to cool the person. Improvise with whatever is available, such as a tub filled with cold water and ice cubes. Vigorous efforts to cool the worker must continue until the body is below 102°F (38.9°C).
5. If the victim is conscious, give water or electrolyte solution. Have the person drink slowly.

6. This is a medical emergency. Seek prompt intervention by emergency medical services.

#### 8.4.3 Chemical Exposure Emergencies

Chemical exposure symptoms vary depending upon the chemical of concern. Based the anticipated hazards at this site, the primary chemical of concern will be benzene. The MSDS for benzene is provided in the attachments.

In the event of chemical exposure, the following general measures should be taken:

1. Contact the Site Health and Safety Manager immediately.
2. For inhaled contaminants, seek immediate medical attention.
3. For contamination of the skin and eyes, use water to flush the affected area.
4. Wash splashes off protective clothing as rapidly as possible and remove the clothing carefully.

#### 8.5 Decontamination During Medical Emergencies

Decontamination procedures for injured personnel are an important medical consideration. Improper decontamination may aggravate or cause more serious health effects. In the event of minor physical problems or injuries, e.g., sprained ankle, cuts, etc., normal decontamination procedures should be followed. However, in the event that a life-threatening situation occurs, decontamination procedures will be omitted and prompt life-saving first aid and medical attention will be administered.

Special decontamination procedures to be followed during the response to a life-threatening physical injury include:

1. Contact the Site Health and Safety Manager immediately.
2. Remove outer garments (depending on the weather) if they do not cause delays, interfere with treatment, or aggravate the problem. Full-encapsulating and chemical resistant suits can be cut away.

3. If the outer contaminated garments cannot safely be removed, wrap the individual in plastic, rubber, or blankets to help prevent contaminating the inside of ambulances and medical personnel.
4. No attempt should be made to wash or rinse the victim at the site. The one exception to this is if it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life.



## **9. SITE SECURITY**

Personnel entering the work area shall be required to read this Health and Safety Plan and familiarize themselves with the site conditions. Unauthorized personnel will not be allowed access to the work area. At the end of the work day, the Site Health and Safety Manager is to ensure the work area has been secured, including the backfilling of all boreholes.

# **ATTACHMENTS**

# CERTIFICATE OF COMPLETION

Presented to

**Sarah Monette**

In Recognition of Having Successfully Completed  
Hazardous Waste Operations and Emergency Response  
Refresher Training under 29 CFR 1910.120(e)(8)

November 17, 1999

  
Huff & Huff, Inc.

# BENZENE

BNZ

Common Synonyms Benzol Benzole		Watery liquid	Colorless	Gasoline-like odor
		Floats on water. Flammable, irritating vapor is produced. Freezing point is 42°F.		
Avoid contact with liquid and vapor. Keep people away. Wear goggles and self-contained breathing apparatus. Shut off ignition sources and call fire department. Stop discharge if possible. Stay upwind and use water spray to "knock down" vapor. Isolate and remove discharged material. Notify local health and pollution control agencies.				
Fire	FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID.  VAPOR Irritating to eyes, nose and throat. If inhaled, will cause headache, difficult breathing, or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.			
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes.  Notify local health and wildlife officials. Notify operators of nearby water intakes.			
1. RESPONSE TO DISCHARGE (See Response Methods Handbook) Issue warning-high flammability Restrict access		2. LABEL 2.1 Category: Flammable liquid 2.2 Class: 3		
3. CHEMICAL DESIGNATIONS 3.1 CG Compatibility Class: Aromatic Hydrocarbon 3.2 Formula: C <sub>6</sub> H <sub>6</sub> 3.3 IMO/UN Designation: 3.2/1114 3.4 DOT ID No.: 1114 3.5 CAS Registry No.: 71-43-2		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless 4.3 Odor: Aromatic; rather pleasant aromatic odor; characteristic odor		
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Hydrocarbon vapor canister, supplied air or a hose mask; hydrocarbon-insoluble rubber or plastic gloves; chemical goggles or face splash shield; hydrocarbon-insoluble apron such as neoprene. 5.2 Symptoms Following Exposure: Dizziness, excitation, pallor, followed by flushing, weakness, headache, breathlessness, chest constriction. Coma and possible death. 5.3 Treatment of Exposure: SKIN: flush with water followed by soap and water; remove contaminated clothing and wash skin. EYES: flush with plenty of water until irritation subsides. INHALATION: remove from exposure immediately. Call a physician, if breathing is irregular or stopped, start resuscitation, administer oxygen. 5.4 Threshold Limit Value: 10 ppm 5.5 Short Term Inhalation Limits: 75 ppm for 30 min. 5.6 Toxicity by Ingestion: Grade 3; LD <sub>50</sub> = 50 to 500 mg/kg 5.7 Late Toxicity: Leukemia 5.8 Vapor (Gas) Irritant Characteristics: If present in high concentrations, vapors may cause irritation of eyes or respiratory system. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smearing and reddening of the skin. 5.10 Odor Threshold: 4.68 ppm 5.11 IDLH Value: 2,000 ppm				

<div>6. FIRE HAZARDS</div> <div><div>6.1 Flash Point: 12°F C.C.</div><div>6.2 Flammable Limits in Air: 1.3%-7.9%</div><div>6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide</div><div>6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective</div><div>6.5 Special Hazards of Combustion Products: Not pertinent</div><div>6.6 Behavior In Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back</div><div>6.7 Ignition Temperature: 1097°F</div><div>6.8 Electrical Hazard: Class I, Group 0</div><div>6.9 Burning Rate: 5.0 mm/min.</div><div>6.10 Adiabatic Flame Temperature: Data not available</div><div>6.11 Stoichiometric Air to Fuel Ratio: Data not available</div><div>6.12 Flame Temperature: Data not available</div></div>	<div>10. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook) A-T-U-V-W</div>																																				
<div>7. CHEMICAL REACTIVITY</div> <div><div>7.1 Reactivity With Water: No reaction</div><div>7.2 Reactivity with Common Materials: No reaction</div><div>7.3 Stability During Transport: Stable</div><div>7.4 Neutralizing Agents for Acids and Caustics: Not pertinent</div><div>7.5 Polymerization: Not pertinent</div><div>7.6 Inhibitor of Polymerization: Not pertinent</div><div>7.7 Molar Ratio (Reactant to Product): Data not available</div><div>7.8 Reactivity Group: 32</div></div>	<div>11. HAZARD CLASSIFICATIONS</div> <div><div>11.1 Code of Federal Regulations: Flammable liquid</div><div>11.2 NAS Hazard Rating for Bulk Water Transportation:<table><thead><tr><th>Category</th><th>Rating</th></tr></thead><tbody><tr><td>Fire.....</td><td>3</td></tr><tr><td>Health</td><td></td></tr><tr><td>  Vapor Irritant.....</td><td>1</td></tr><tr><td>  Liquid or Solid Irritant.....</td><td>1</td></tr><tr><td>  Poisons.....</td><td>3</td></tr><tr><td>Water Pollution</td><td></td></tr><tr><td>  Human Toxicity.....</td><td>3</td></tr><tr><td>  Aquatic Toxicity.....</td><td>1</td></tr><tr><td>  Aesthetic Effect.....</td><td>3</td></tr><tr><td>Reactivity</td><td></td></tr><tr><td>  Other Chemicals.....</td><td>2</td></tr><tr><td>  Water.....</td><td>1</td></tr><tr><td>  Self Reaction.....</td><td>0</td></tr></tbody></table></div><div>11.3 NFPA Hazard Classification:<table><thead><tr><th>Category</th><th>Classification</th></tr></thead><tbody><tr><td>Health Hazard (Blue).....</td><td>2</td></tr><tr><td>Flammability (Red).....</td><td>3</td></tr><tr><td>Reactivity (Yellow).....</td><td>0</td></tr></tbody></table></div></div>	Category	Rating	Fire.....	3	Health		Vapor Irritant.....	1	Liquid or Solid Irritant.....	1	Poisons.....	3	Water Pollution		Human Toxicity.....	3	Aquatic Toxicity.....	1	Aesthetic Effect.....	3	Reactivity		Other Chemicals.....	2	Water.....	1	Self Reaction.....	0	Category	Classification	Health Hazard (Blue).....	2	Flammability (Red).....	3	Reactivity (Yellow).....	0
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<div>8. WATER POLLUTION</div> <div><div>8.1 Aquatic Toxicity:<div>5 ppm/6 hr/minnow/lethal/distilled water</div><div>20 ppm/24 hr/sunfish/TL<sub>50</sub>/tap water</div></div><div>8.2 Waterfowl Toxicity: Data not available</div><div>8.3 Biological Oxygen Demand (BOD): 1.2 lb/lb, 10 days</div><div>8.4 Food Chain Concentration Potential: None</div></div>	<div>12. PHYSICAL AND CHEMICAL PROPERTIES</div> <div><div>12.1 Physical State at 15°C and 1 atm: Liquid</div><div>12.2 Molecular Weight: 78.11</div><div>12.3 Boiling Point at 1 atm: 176°F = 80.1°C = 353.3°K</div><div>12.4 Freezing Point: 42.0°F = 5.5°C = 278.7°K</div><div>12.5 Critical Temperature: 552.0°F = 288.9°C = 562.1°K</div><div>12.6 Critical Pressure: 710 psia = 48.3 atm = 4.89 MN/m²</div><div>12.7 Specific Gravity: 0.879 at 20°C (liquid)</div><div>12.8 Liquid Surface Tension: 28.9 dynes/cm = 0.0289 N/m at 20°C</div><div>12.9 Liquid Water Interfacial Tension: 35.0 dynes/cm = 0.035 N/m at 20°C</div><div>12.10 Vapor (Gas) Specific Gravity: 2.7</div><div>12.11 Ratio of Specific Heats of Vapor (Gas): 1.061</div><div>12.12 Latent Heat of Vaporization: 169 Btu/lb = 94.1 cal/g = 3.94 X 10³ J/kg</div><div>12.13 Heat of Combustion: -17,460 Btu/lb = -9696 cal/g = -406.0 X 10³ J/kg</div><div>12.14 Heat of Decomposition: Not pertinent</div><div>12.15 Heat of Solution: Not pertinent</div><div>12.16 Heat of Polymerization: Not pertinent</div><div>12.25 Heat of Fusion: 30.45 cal/g</div><div>12.26 Limiting Value: Data not available</div><div>12.27 Reid Vapor Pressure: 3.22 psia</div></div>																																				
<div>9. SHIPPING INFORMATION</div> <div><div>9.1 Grades of Purity:<div>Industrial pure .....99+ %</div><div>Thiophene-free .....99+ %</div><div>Nitration .....99+ %</div><div>Industrial 90% .....85+ %</div><div>Reagent .....99+ %</div></div><div>9.2 Storage Temperature: Open</div><div>9.3 Inert Atmosphere: No requirement</div><div>9.4 Venting: Pressure-vacuum</div></div>																																					

NOTES

12.17 SATURATED LIQUID DENSITY		12.18 LIQUID HEAT CAPACITY		12.19 LIQUID THERMAL CONDUCTIVITY		12.20 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit-inch per hour- square foot-F	Temperature (degrees F)	Centipoise
55	55.330	45	.394	75	.988	55	.724
60	55.140	50	.396	80	.961	60	.693
65	54.960	55	.398	85	.975	65	.665
70	54.770	60	.400	90	.969	70	.638
75	54.580	65	.403	95	.962	75	.612
80	54.400	70	.405	100	.956	80	.588
85	54.210	75	.407	105	.950	85	.566
90	54.030	80	.409	110	.944	90	.544
95	53.840	85	.411	115	.937	95	.524
100	53.660	90	.414	120	.931	100	.505
105	53.470	95	.416	125	.925	105	.487
110	53.290	100	.418	130	.919	110	.470
115	53.100			135	.912	115	.453
120	52.920			140	.906	120	.438
125	52.730			145	.900		
130	52.540			150	.893		
135	52.360			155	.887		
140	52.170			160	.881		
145	51.990			165	.875		
150	51.800			170	.868		
155	51.620						
160	51.430						
165	51.250						
170	51.060						
175	50.870						

12.21 SOLUBILITY IN WATER		12.22 SATURATED VAPOR PRESSURE		12.23 SATURATED VAPOR DENSITY		12.24 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
77.02	.180	50	.881	50	.01258	0	.204
		60	1.171	60	.01639	25	.219
		70	1.535	70	.02109	50	.234
		80	1.989	80	.02681	75	.248
		90	2.547	90	.03371	100	.261
		100	3.227	100	.04196	125	.275
		110	4.049	110	.05172	150	.288
		120	5.033	120	.06317	175	.301
		130	6.201	130	.07652	200	.313
		140	7.577	140	.09194	225	.325
		150	9.187	150	.10960	250	.337
		160	11.060	160	.12980	275	.349
		170	13.220	170	.15270	300	.360
		180	15.700	180	.17850	325	.371
		190	18.520	190	.20750	350	.381
		200	21.740	200	.23970	375	.392
		210	25.360	210	.27560	400	.402
						425	.412
						450	.421
						475	.431
						500	.440
						525	.448
						550	.457
						575	.465
						600	.474

## HEALTH AND SAFETY PLAN APPROVAL SIGN-OFF

Date \_\_\_\_\_

[illegible]

## **REMEDATION WORK PLAN CLEANING UP REFRACTORY BRICK PILE LOCATED ON CONCRETE PAD**

This plan addresses the steps that will be taken to remove, recycle or dispose of non-hazardous materials located on the concrete pad, also referred to as the "debris pile."

In October 1999, the area was characterized by Huff & Huff. Samples of refractory brick were tested using TCLP and determined not to exhibit a hazardous waste characteristic. After further investigation of the materials discarded in the area, Sheffield has identified the following additional materials: trash, mill scale and open-top drums used to transport mill scale and refractory to the area.

The first phase of the Remediation is to hand sort and remove from the debris pile lumber, refractory, concrete, paper, rags, hoses, tires and empty drums. This phase began on March 27, 2000.

The second phase will be to separate all ferrous scrap, which includes empty drums. Each drum will be separately inspected and characterized. Once each drum has been inspected and determined not to contain a hazardous waste, it will be crushed and processed as scrap metal for remelting.

The next step will be to remove a few abandoned appliances from the debris pile and stage them in a separate area. These appliances will be inspected and properly processed before being disposed of off-site in an environmentally safe manner.

Wood, paper, plastic, rubber hoses, tires, rags, refractory brick, concrete blocks and other trash will be separated and sent to Waste Management's Laraway facility in Elwood, Illinois.

The mill scale will be processed through a ½" screener to separate refractory brick and trash. The refractory brick and trash will be disposed of at Waste Management's Laraway facility. The mill scale will be returned to the mill scale pile located on the northwest corner of the facility and sold.

The equipment being used will consist of an excavator, front-end loader, dump truck and Screen-All screener with ½" screens.

Waste Management will transport all non-hazardous waste to their Laraway facility.